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nat (tunneling OR Ipsec) netseal  
tunneling nat  
ftp EPSV nat  
"port command" (nat OR translation) ipsec  
("secure ftp" OR sftp) "port command"  
("secure ftp" OR sftp) "port command" (nat OR translation)  
"ftp forwarding" daterange:2449718-2451796  
"port command" (nat OR translation) substitute internal external  
(substitute OR rewrite OR replace OR override OR overwritten OR overload) "port  
command" (nat OR translation)  
cisco "how nat works"  
nat translation application layer gateway  
nat translation ("application layer gateway" OR alg)  
nat translation "application layer gateway" payload  
sftp nat (internal OR private OR non-routable) "port command"

## ACM

+nat +ftp

## IEEE

(nat <or> "network address translation") <and> (alg <or> "application layer gateway")  
<and> (ftp)

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Result page: **1** [2](#) [3](#) [4](#) [5](#) [next](#)Relevance scale **1 Developing a natural language interface to complex data**

Gary G. Hendrix, Earl D. Sacerdoti, Daniel Sagalowicz, Jonathan Slocum

June 1978 **ACM Transactions on Database Systems (TODS)**, Volume 3 Issue 2Full text available:  [pdf\(3.13 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Aspects of an intelligent interface that provides natural language access to a large body of data distributed over a computer network are described. The overall system architecture is presented, showing how a user is buffered from the actual database management systems (DBMSs) by three layers of insulating components. These layers operate in series to convert natural language queries into calls to DBMSs at remote sites. Attention is then focused on the first of the insulating components, th ...

**Keywords:** database access, human engineering, intelligent interface, natural language, run-time personalization, semantic grammar

**2 Explicit allocation of best-effort packet delivery service**

David D. Clark, Wenjia Fang

August 1998 **IEEE/ACM Transactions on Networking (TON)**, Volume 6 Issue 4Full text available:  [pdf\(208.85 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** Internet protocol, TCP, packet networks, quality of service, rate control

**3 Optimizing TCP forwarder performance**

Oliver Spatscheck, Jørgen S. Hansen, John H. Hartman, Larry L. Peterson

April 2000 **IEEE/ACM Transactions on Networking (TON)**, Volume 8 Issue 2Full text available:  [pdf\(119.23 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** TCP, firewall, proxy, router

**4 Building a Wireless Network with Linux**

Billy Ball  
May 2000 **Linux Journal**

Full text available:  [html\(12.49 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Want your laptop and PC to talk to each other without having to deal with wires? Here's how.

**5 Eliminating array bound checking through dependent types**

Hongwei Xi, Frank Pfenning  
May 1998 **ACM SIGPLAN Notices, Proceedings of the ACM SIGPLAN 1998 conference on Programming language design and implementation**, Volume 33 Issue 5

Full text available:  [pdf\(1.07 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We present a type-based approach to eliminating array bound checking and list tag checking by conservatively extending Standard ML with a restricted form of dependent types. This enables the programmer to capture more invariants through types while type-checking remains decidable in theory and can still be performed efficiently in practice. We illustrate our approach through concrete examples and present the result of our preliminary experiments which support support the feasibility and effectiv ...

**6 A scalable comparison-shopping agent for the World-Wide Web**

Robert B. Doorenbos, Oren Etzioni, Daniel S. Weld  
February 1997 **Proceedings of the first international conference on Autonomous agents**

Full text available:  [pdf\(978.62 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**7 IP Masquerading with Linux: How to enable and configure IP masquerading with Linux**

Chris Kostick  
July 1996 **Linux Journal**

Full text available:  [html\(19.20 KB\)](#) Additional Information: [full citation](#), [index terms](#)

**8 Traffic characterization of the NSFNET national backbone**

Steven A. Heimlich  
April 1990 **ACM SIGMETRICS Performance Evaluation Review, Proceedings of the 1990 ACM SIGMETRICS conference on Measurement and modeling of computer systems**, Volume 18 Issue 1

Full text available:  [pdf\(164.50 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Traditionally, models of packet arrival in communication networks have assumed either Poisson or compound Poisson arrival patterns. A study of a token ring local area network (LAN) at MIT [5] found that packet arrival followed neither of these models. Instead, traffic followed a more general model dubbed the "packet train," which describes network traffic as a collection of packet streams traveling between pairs of nodes. A packet train consists of a number of packets travelling ...

**9 Automated proofs of object code for a widely used microprocessor**

Robert S. Boyer, Yuan Yu  
January 1996 **Journal of the ACM (JACM)**, Volume 43 Issue 1

Full text available:  [pdf\(2.41 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

**Keywords:** Ada, Boyer-Moore logic, C, Common Lisp, MC68xxx, Nqthm, automated reasoning, formal methods, machine code, mechanical theorem proving, object code, program proving, program verification

#### **10 Sound polymorphic type inference for objects**

Jonathan Eifrig, Scott Smith, Valery Trifonov

October 1995 **ACM SIGPLAN Notices , Proceedings of the tenth annual conference on Object-oriented programming systems, languages, and applications,**

Volume 30 Issue 10

Full text available:  [pdf\(5.82 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A polymorphic, constraint-based type inference algorithm for an object-oriented language is defined. A generalized form of type, polymorphic *recursively constrained* types, are inferred. These types are expressive enough for typing objects, since they generalize recursive types and F-bounded polymorphism. The well-known tradeoff between inheritance and subtyping is mitigated by the type inference mechanism. Soundness and completeness of type inference are established.

#### **11 ASN.1 protocol specification for use with arbitrary encoding schemes**

Duke Tantiprasut, John Neil, Craig Farrell

August 1997 **IEEE/ACM Transactions on Networking (TON)**, Volume 5 Issue 4

Full text available:  [pdf\(159.77 KB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

#### **12 Modular logic programming**

Antonio Brogi, Paolo Mancarella, Dino Pedreschi, Franco Turini

July 1994 **ACM Transactions on Programming Languages and Systems (TOPLAS)**,

Volume 16 Issue 4

Full text available:  [pdf\(2.41 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Modularity is a key issue in the design of modern programming languages. When designing modular features for declarative languages in general, and for logic programming languages in particular, the challenge lies in avoiding the superimposition of a complex syntactic and semantic structure over the simple structure of the basic language. The modular framework defined here for logic programming consists of a small number of operations over modules which are (meta-) logically defined and sema ...

**Keywords:** composition operations, declarative semantics, logic programs, metalogic, modularity, program transformation

#### **13 Constraint programming and database languages: a tutorial**

Paris Kanellakis

May 1995 **Proceedings of the fourteenth ACM SIGACT-SIGMOD-SIGART symposium on Principles of database systems**

Full text available:  [pdf\(892.24 KB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

#### **14 Generation of formatters for context-free languages**

Mark van den Brand, Eelco Visser

January 1996 **ACM Transactions on Software Engineering and Methodology (TOSEM)**,  
Volume 5 Issue 1

Full text available:  [pdf\(2.33 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Good documentation is important for the production of reusable and maintainable software. For the production of accurate documentation it is necessary that the original program text is not copied manually to obtain a typeset version. Apart from being tedious, this will invariably introduce errors. The production of tools that support the production of legible and accurate documentation is a software engineering challenge in itself. We present an algebraic approach to the generation of tools ...

**Keywords:** document preparation, program generators

**15 MPP: a framework for distributed polynomial computations** 

Olaf Bachmann, Hans Schöemann, Simon Gray

October 1996 **Proceedings of the 1996 international symposium on Symbolic and algebraic computation**

Full text available:  [pdf\(1.23 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**16 A compiler approach to scalable concurrent-program design** 

Ian Foster, Stephen Taylor

May 1994 **ACM Transactions on Programming Languages and Systems (TOPLAS)**,  
Volume 16 Issue 3

Full text available:  [pdf\(1.71 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

We describe a compilation system for the concurrent programming language Program Composition Notation (PCN). This notation provides a single-assignment programming model that permits concurrent-programming concerns such as decomposition, communication, synchronization, mapping, granularity, and load balancing to be addressed separately in a design. PCN is also extensible with programmer-defined operators, allowing common abstractions to be encapsulated and ...

**Keywords:** monotonicity, program composition, programming abstractions, source-to-source transformations

**17 Harmony... on an expanding net** 

Barry Fenn, Hermann Maurer

October 1994 **interactions**, Volume 1 Issue 4

Full text available:  [pdf\(1.36 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

**18 The changing nature of network traffic: scaling phenomena** 

A. Feldmann, A. C. Gilbert, W. Willinger, T. G. Kurtz

April 1998 **ACM SIGCOMM Computer Communication Review**, Volume 28 Issue 2

Full text available:  [pdf\(1.80 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

In this paper, we report on some preliminary results from an in-depth, wavelet-based analysis of a set of high-quality, packet-level traffic measurements, collected over the last 6-7 years from a number of different wide-area networks (WANs). We first validate and confirm an earlier finding, originally due to Paxson and Floyd [14], that actual WAN traffic is consistent with statistical self-similarity for sufficiently large time scales. We then relate this

large-time scaling phenomenon to the em ...

**19 System Administration: IP Masquerading Code Follow-Up**

Chris Kostick

November 1997 **Linux Journal**

Full text available:  [html\(20.31 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)



**20 Pen computing: a technology overview and a vision**

André Meyer

July 1995 **ACM SIGCHI Bulletin**, Volume 27 Issue 3

Full text available:  [pdf\(5.14 MB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)



This work gives an overview of a new technology that is attracting growing interest in public as well as in the computer industry itself. The visible difference from other technologies is in the use of a pen or pencil as the primary means of interaction between a user and a machine, picking up the familiar pen and paper interface metaphor. From this follows a set of consequences that will be analyzed and put into context with other emerging technologies and visions. Starting with a short historic ...

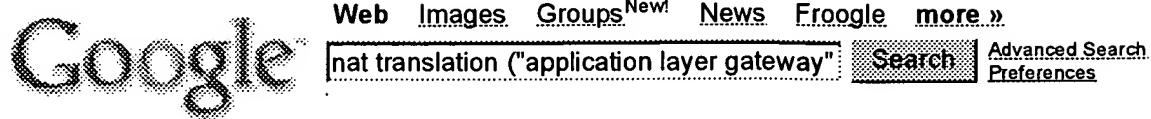
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### Network address translation - Wikipedia, the free encyclopedia

... Layer Gateway (ALG) can fix this problem. An ALG software module running on a NAT firewall device updates any payload data made invalid by address translation. ...  
[en.wikipedia.org/wiki/NAT](http://en.wikipedia.org/wiki/NAT) - 21k - Cached - Similar pages

### [PDF] NAT Appl Lyr OV.fm

File Format: PDF/Adobe Acrobat - [View as HTML](#)  
 ... Overview Application Layer Gateway and Translation Type Support Cisco IOS ® Network Address Translation (NAT) performs translation service on ...  
[www.cisco.com/warp/public/732/Tech/ipservices/natalgs.pdf](http://www.cisco.com/warp/public/732/Tech/ipservices/natalgs.pdf) - Similar pages

### NAT Stateful Failover for Asymmetric Outside-to-Inside and ALG ...

... Outside-to-Inside and Application Layer Gateway (ALG) Support feature ... to-Inside and ALG Support feature, be ... that controlled the NAT translation entries unless ...  
[www.cisco.com/en/US/products/sw/iosswrel/ps5207/products\\_feature\\_guide09186a00801fce09.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps5207/products_feature_guide09186a00801fce09.html) - 101k - Cached - Similar pages  
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### ETRI/PEC - IPv4/IPv6 Translation Technology - NAT-PT - Overview

... For example, there are DNS-ALG, FTP-ALG and etcetera. ... But, NAT-PT is less scalable than other translation methods. Our Implementation. ...  
[www.ipv6.or.kr/english/natpt-overview.htm](http://www.ipv6.or.kr/english/natpt-overview.htm) - 8k - Cached - Similar pages

### [PDF] Establishing Multimedia Sessions between IPv6 Hosts and IPv6 Hosts

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 ... Page 15. I User space – NAT: translation maps (IPv4 <-> IPv6) – PT: header translation – ALG: keyed to port number I Kernel space – IPTables ...  
[www.linux.ericsson.ca/visibility/ols2003\\_slides.pdf](http://www.linux.ericsson.ca/visibility/ols2003_slides.pdf) - Similar pages

### RFC3235: Network Address Translator (NAT)-Friendly Application ...

... Bi-directional NAT devices (in conjunction with DNS-ALG) are amenable to peer-to-peer applications. 3.5 Twice NAT Twice NAT is address translation where ...  
[rfc3235.x42.com/](http://rfc3235.x42.com/) - 31k - Cached - Similar pages

### 2002-12.mail: Re: on NAT-PT

... (1) is not correct. NAT-PT RFC does not specify where to place DNS-ALG.  
 DNS-ALG and NAT-PT translation part can reside on different boxes. ...  
[dict.regex.info/ipv6/v6ops/2002-12.mail/0022.html](http://dict.regex.info/ipv6/v6ops/2002-12.mail/0022.html) - 11k - Cached - Similar pages

### [PDF] SIIT and NAT-PT

File Format: PDF/Adobe Acrobat  
 ... Translator)) NAT NAT-PT ( PT (Network Address Translation Network Address Translation — Protocol Protocol Translation Translation)) ...  
[www.ipv6-es.com/02/docs/alberto\\_garcia.pdf](http://www.ipv6-es.com/02/docs/alberto_garcia.pdf) - Similar pages

### [PDF] Reasons to Deprecate Nat-PT

File Format: PDF/Adobe Acrobat - [View as HTML](#)  
 ... Scenarios mentioned so far... Fronting legacy server Translation ... but DNS-ALG is NOT needed Double NAT-PT – connecting v4 islands across v6 only ocean ...

[www1.ietf.org/Proceedings\\_new/04nov/slides/v6ops-6.pdf](http://www1.ietf.org/Proceedings_new/04nov/slides/v6ops-6.pdf) - [Similar pages](#)

[IPv6style: A Discussion on IPv6 Transition Mechanisms Part2 Teredo ...](http://www.ipv6style.jp/en/building/20030822/index.shtml)  
... They both include the same functions as NAT-PT; address pools for mapping addresses dynamically, and a DNS-ALG, and the **translation** algorithm SIIT. ...  
[www.ipv6style.jp/en/building/20030822/index.shtml](http://www.ipv6style.jp/en/building/20030822/index.shtml) - 28k - [Cached](#) - [Similar pages](#)

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 ("secure ftp" OR sftp) "port command" (nat)  Advanced Search Preferences

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### FTP Help

... FTP Woes: 500 Invalid Port Command [resolved]; how can I set ... for help~; FTP Linux to Windows; **secure ftp** on linux; ... Anonymous Login and DNS; SCP vs SFTP vs PGPMail ... forums.devshed.com/archive/f-113 - 27k - Dec 15, 2004 - Cached - Similar pages

### FTP Notes

... out there, RFC 2228 to have SSL encrypted **secure FTP** access ... is not to be confused with **SFTP** which is ... Server to Server transfer failed: 500 Illegal **PORT command** ... www.rbrowser.com/FTPNotes.html - 12k - Cached - Similar pages

### Paul Ford-Hutchinson <draft-fordh-ftp-ssl-firewall-00.txt> IBM UK ...

... a Content Aware firewall observes a **PORT command** or the ... 7. Trying to **secure FTP** with TLS over firewalls ... Network Address Translators **NAT** firewalls will not work ... www.fastmirrors.org/wu-ftp/wu-ftp-attic/ ietf.org/draft-fordh-ftp-ssl-firewall-00.txt - 23k - Cached - Similar pages

### The macosxhints Forums - FTP log-in problem

... me a 500 error as well, "Illegal **port command**." All I ... is worth noting that there are free **SFTP** clients available ... d rather not use the less-**secure FTP** protocol. ... forums.macosxhints.com/showthread.php?t=23213 - 38k - Supplemental Result - Cached - Similar pages

### WS\_FTP Professional - Features

... **SFTP** over SSH 2.0 Secures your data during the access ... data when running behind firewalls and **NAT** devices ... address and port range when using **PORT command** over SSL ... www.ipswitch.com/Products/WS\_FTP/features.html - 28k - Cached - Similar pages

### [PDF] datasheet\_FTP.qxd (Page 1)

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... **SFTP** over SSH 2.0 - Secures data during the ... and port range when using **PORT command** over SSL ... firewalls and Network Address Translation (**NAT**) devices with or ... www.ipswitch.com/partners/datasheet\_FTP.pdf - Similar pages

### # Net::FTP.pm # # Copyright (c) 1995-8 Graham Barr <gbarr@pobox...

... return undef; } \$dftp->pasv\_wait(\$sftp); } sub pasv\_wait ... 4 =item port ( [ **PORT** ] ) Send aC<**PORT**> **command** to the ... also performing any <CRLF> **translation** necessary ... search.cpan.org/src/GBARR/libnet-1.09/Net/FTP.pm - 41k - Supplemental Result - Cached - Similar pages

### RhinoSoft.com - Newsletter Archive detailing information on **FTP** ...

... is that they use **NAT** (Network Address Translation) through a router or a proxy server.

When **NAT** works for **FTP**, it translates the "**PORT**" **command** issued by **FTP** ...

www.rhinosoft.com/newsletter/ NewsL2004-05-05.asp?prod=fv - 40k - Cached - Similar pages

### FTP by Example - Articles - The Freefire Project

... (DJB's lightweight and **secure FTP** Server publicfile ... 1,4,1 # 4\*256+1=1025 200 **PORT command** successful ... is a gateway which is doing masquerading or **NAT** (See RFC2993 ... www.freefire.org/articles/ftpexample.php3 - 26k - Cached - Similar pages

### How the **FTP** protocol Challenges Firewall Security

... What about **Secure FTP**. ... to the IP address and port number learned from the **PORT command**. ...

clients and even servers behind Network Address Translation (NAT) devices ...  
[www.isaserver.org/articles/ How\\_the\\_FTP\\_protocol\\_Challenges\\_Firewall\\_Security.html](http://www.isaserver.org/articles/How_the_FTP_protocol_Challenges_Firewall_Security.html) - 76k -  
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 "port command" (nat OR translation) substi  Advanced Search

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[PDF] Microsoft PowerPoint - 04.NAT

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... tables Solution: Use tunneling instead of address **translation** Tunnel packets ... Is PORT 192,168,150,80,14,178 200 **PORT command** successful. ... Supporting FTP with NAT ...

[www.cs.utexas.edu/users/vin/Classes/CS395T-Fall03/Slides/04.pdf](http://www.cs.utexas.edu/users/vin/Classes/CS395T-Fall03/Slides/04.pdf) - [Similar pages](#)

[doc] Solaris and IP Filter: How to Make Them Your NAT solution

File Format: Microsoft Word 97 - [View as HTML](#)

... also used in conjunction with the 'port' command to indicate ... to the internal address; however, NAT is supposed ... network and port address **translation**) because it ...

[www.filabito.org/sun/lib/security/securityfocus/solaris\\_and\\_ipf\\_how\\_to\\_make\\_it\\_your\\_NAT\\_solution.doc](http://www.filabito.org/sun/lib/security/securityfocus/solaris_and_ipf_how_to_make_it_your_NAT_solution.doc) - [Similar pages](#)

RFC1631: The IP Network Address Translator (NAT). K. Egevang, P. ...

... Of course, if the FTP session is encrypted, the **PORT command** will fail. ... And, if encryption is used then it is impossible for NAT to make the **translation**. ...

[rfc1631.x42.com/](http://rfc1631.x42.com/) - 24k - [Cached](#) - [Similar pages](#)

Mail Archive: (ngtrans) Draft NAT-PTv4

... If the IP address in **PORT command** or PASV response is ... ALG should **substitute** this with the **NAT-PT** assigned ... The reverse (**translation** from v4 address to V6 address ...

[www.cs-ipv6.lancs.ac.uk/ipv6/mail-archive/NgTrans/1999-02/0016.html](http://www.cs-ipv6.lancs.ac.uk/ipv6/mail-archive/NgTrans/1999-02/0016.html) - 40k - [Cached](#) - [Similar pages](#)

Mail Archive: (ngtrans) NAT-PTv02 update

... If the IP address in **PORT command** or PASV response is a ... PT must **substitute** this with the **NAT-PT** assigned ... The reverse (**translation** from v4 address to V6 address ...

[www.cs-ipv6.lancs.ac.uk/ipv6/mail-archive/NgTrans/1998-09/0001.html](http://www.cs-ipv6.lancs.ac.uk/ipv6/mail-archive/NgTrans/1998-09/0001.html) - 54k -

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Firewalls Complete - Types of Firewalls and Products on the Market

... the back-connection (an FTP **PORT command**), FireWall-1 ... Labyrinth firewall performs bi-directional NAT by using ... rules to instruct the **translation** modules to ...

[\[Complete\\\_\\\_Types\\\_of\\\_Firewalls\\\_and\\\_Products\\\_on\\\_the\\\_Market.html\]\(http://www.secinf.net/.../Firewalls\_Complete/Firewalls\_\) - 101k - \[Cached\]\(#\) - \[Similar pages\]\(#\)](http://www.secinf.net/.../Firewalls_Complete/Firewalls_</a></p>
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... all application programs, the term **external command** is ... DIR command is the first DOS **internal command** you ... You cannot **substitute** another word, such as DIRECTORY ...

[www.fbeedle.com/win98/37-6ch15.pdf](http://www.fbeedle.com/win98/37-6ch15.pdf) - [Similar pages](#)

[PDF] Check Point™ FireWall-1 Guide

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... BUT NOT LIMITED TO, PROCUREMENT OF **SUBSTITUTE** GOODS OR ... translated 58 FIGURE 1-38 Multiple NAT Rules Added to ... Mode) 63 FIGURE 1-42 Address **Translation** and Anti ...

[www.checkpoint.com/support/technical/documents/docs-5.0/firewall\\_ng\\_sp0.pdf](http://www.checkpoint.com/support/technical/documents/docs-5.0/firewall_ng_sp0.pdf) - [Similar pages](#)

How the FTP protocol Challenges Firewall Security

... IP address and port number learned from the **PORT command**. ... So, without added special support, simple NAT/PAT devices ... No network address **translation** is performed ...  
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[PDF] **Common Issues**

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... In general, you can **substitute fw\_allow\_udp\_port0** and **0x1** ... you wanted to do hide mode NAT, replace ... object determines which interfaces are **internal** and **external**. ...  
[searchsecurity.techtarget.com/searchSecurity/downloads/CheckPoint-Ch06.pdf](http://searchsecurity.techtarget.com/searchSecurity/downloads/CheckPoint-Ch06.pdf) - Similar pages

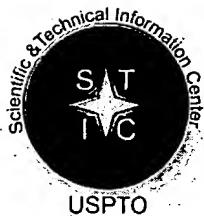
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IEEE    INSPEC    SPI    Other \_\_\_\_\_Is this a "Fast & Focused" Search Request? (Circle One)  YES  NO

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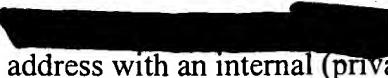
What is the topic, novelty, motivation, utility, or other specific details defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, definitions, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract, background, brief summary, pertinent claims and any citations of relevant art you have found.

<http://www.stdnet.com/uploads/media/MOVEit-DMZ-FTPS-NAT-Whitepaper.PDF>



Normally, at the step I've highlighted, the wrong address is given (the FTP server's address = 10.1.1.4 shouldn't be given as shown on p. 4). This last page shows the solution, where the FTP server (the MOVEit DMV) retrieves its external IP (33.33.33.33) and uses that address to tell the client to connect to the server (rather than (10.1.1.3), as on p. 4).

In this paper, the server is telling the client to use the server's external (also called public, routable) address, which will then be forwarded (through a process called Network Address Translation OR NAT) to the server's internal (also called private, non-routable) address.

 ftp using encryption, where one side replaces an external (public, routable) address with an internal (private, non-routable) address.

STIC Searcher Geoffrey St. Leger Phone 03540  
Date picked up 12/17/04 Date Completed 12/17/04

15/9/6 (Item 6 from file: 613)  
DIALOG(R)File 613:PR Newswire  
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00773316 · 20020528MNTU010 (THIS IS THE FULLTEXT)  
**MOVEit DMZ Extends Secure File Transfer Leadership**  
PR Newswire  
Tuesday, May 28, 2002 16:01 EDT  
JOURNAL CODE: PR LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT  
DOCUMENT TYPE: NEWSWIRE  
WORD COUNT: 551

TEXT:

MADISON, Wis., May 28 /PRNewswire/ - **Standard Networks** today released the newest version of its **MOVEit DMZ** secure file transfer and storage software, further lengthening that product's existing lead over so-called "secure" FTP servers.

Other than the ability to manage authenticated, encrypted file transfers, there is nothing particularly secure about the typical "secure" FTP server. Such products de-encrypt and store files "in the clear," which means your sensitive data can be read by anyone who hacks the server. In contrast, **MOVEit DMZ** has always re-encrypted and securely stored all the files it receives. **MOVEit DMZ** does this using its own strong, built-in, 256-bit key AES encryption. **MOVEit DMZ** was designed from the ground up to keep your files from being read, even if the server is hacked.

And now the new **MOVEit DMZ** v.2.2 has advanced, firewall-friendly security features that "secure" FTP servers lack.

Network security experts agree that Passive mode FTP transfers are far more secure than Active mode FTP transfers. Most "secure" FTP servers support Passive mode by requiring you to open all the ports on your firewall above 1023 -- some 64,000 open ports. This creates serious, and unnecessary, network security vulnerabilities. In contrast, **MOVEit DMZ** v.2.2 handles encrypted Passive FTP in a way that greatly minimizes security vulnerabilities. **MOVEit DMZ** can require Passive mode FTP transfers, and force the use of a specific, limited range of open ports -- with as few as 4 ports.

Many organizations use NAT (network address translation) on their internal networks. Most "secure" FTP servers are unable to establish encrypted FTP connections with FTP clients when the server is located on a network using NAT. In contrast, **MOVEit DMZ** v.2.2 features a built-in NAT table that makes such transfers possible -- even if the client and server are located on separate NAT networks -- and even if the client and server have identical NAT addresses.

The new features in **MOVEit DMZ**, together with its existing secure file storage capability, support for file transfers using both standard Web browsers and secure FTP clients, and ability to send file arrival email notices to end-users, further extends **MOVEit DMZ**'s lead over so-called "secure" FTP servers it is sometimes mistakenly compared with. When it comes to secure file transfers, see why those in the know say "**MOVEit or lose it.**"

For more about **MOVEit DMZ**, including how to request a free evaluation, visit <http://www.stdnet.com/moveitdmz> .

**About Standard Networks**

Standard Networks ( <http://www.stdnet.com> ) is a privately held software developer founded in 1989 to create high-capacity data communication and protocol translation products for the global financial services industry. The company has over a dozen years experience creating secure, reliable solutions and providing responsive, high-quality support for them. Other products by Standard Networks include:

- The MOVEit family of software products, which provide comprehensive, integrated, standards-based solutions for the secure file processing, storage, and transfer of sensitive information over the Internet.
- ActiveHEAT, which provides real-time data exchange between Web, Windows, and XML-capable client/server apps and legacy apps running on IBM OS/390 and AS/400 systems as well as Unisys hosts.

le 347:JAPIO Nov 1976-2004/Aug (Updated 041203)  
(c) 2004 JPO & JAPIO  
le 350:Derwent WPIX 1963-2004/UD,UM &UP=200481  
(c) 2004 Thomson Derwent

Set	Items	Description
S1	1194	NAT OR NETWORK() ADDRESS() TRANSLAT?????
S2	921	FTP OR FILE() TRANSFER() PROTOCOL
S3	2317	(EXTERNAL OR ROUTABLE OR PUBLIC) (2W) (ADDRESS OR ADDRESSES)
S4	1830	(INTERNAL OR NONROUTABLE OR (NON OR "NOT") () ROUTABLE OR PR- IVATE) (2W) (ADDRESS OR ADDRESSES)
S5	0	S1 AND S2 AND S3 AND S4
S6	1	S1 AND S2 AND S3:S4
S7	4	S1 AND S2

7/5/1 (Item 1 from file: 347)  
DIALOG(R) File 347:JAPIO  
(c) 2004 JPO & JAPIO. All rts. reserv.

07959721 \*\*Image available\*\*  
**NAT** DEVICE, TCP COMMUNICATION METHOD, COMMUNICATION PROGRAM, AND RECORDING MEDIUM

PUB. NO.: 2004-072480 [JP 2004072480 A]  
PUBLISHED: March 04, 2004 (20040304)  
INVENTOR(s): ITO YOSUKE  
FUKUDA YOSHIMI  
APPLICANT(s): NIPPON TELEGR & TELEPH CORP (NTT)  
APPL. NO.: 2002-230036 [JP 2002230036]  
FILED: August 07, 2002 (20020807)  
INTL CLASS: H04L-012/46

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide a **NAT** (network address translation) device which is possible to perform communication of a protocol including information of IP addresses and port numbers such as **FTP** (file transfer protocol) or H.323 inside of a packet.

SOLUTION: The **NAT** device positions between a device belonging to a private address space and a device belonging to a global address space. When the **NAT** address establishes a TCP (transmission control protocol) session between the device belonging to the private address space and the device belonging to the global address space, it is provided with a 1st means which creates a mapping table for address translation corresponding to the private address of the device belonging to the private address space to an arbitrary global address in the global addresses held in the **NAT** device, a 2nd means which holds the mapping table until a constant time elapses from the time of completion of the TCP, and a 3rd means which deletes the mapping table after the predetermined time elapses.

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7/5/2 (Item 1 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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016550186 \*\*Image available\*\*  
WPI Acc No: 2004-708927/200469  
XRPX Acc No: N04-562162

Network service management system e.g. for web content, translates client identifier to virtual source identifier, virtual identifier to actual identifier of service requested by client, and transmits them to intended server

Patent Assignee: DAR S (DARS-I); SHOCHAT E (SHOC-I); SOLOMONOVICH G (SOLO-I); SAVANTIS SYSTEMS INC (SAVA-N)

Inventor: DAR S; SHOCHAT E; SOLOMONOVICH G; KANTER B

Number of Countries: 108 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040193677	A1	20040930	US 2003395801	A	20030324	200469 B
WO 200486725	A2	20041007	WO 2004US8907	A	20040324	200469

Priority Applications (No Type Date): US 2003395801 A 20030324

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040193677	A1	15		G06F-015/16	
WO 200486725	A2	E		H04L-029/06	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ

UA UG UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR  
GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ  
TR TZ UG ZM ZW

Abstract (Basic): US 20040193677 A1

NOVELTY - A switch analyzes communication received from a client to identify client identifier of communication originating client and virtual service identifier associated with the intended service. The switch translates virtual service identifier to actual service identifier of the service, translates client identifier to virtual source identifier, and transmits translated identifiers to server for intended service.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) method of conveying communications between client and server; and

(2) communication system.

USE - For managing network services e.g. web content, file transfer protocol, electronic mail, e-commerce, printing, graphics, audio and/or video services.

ADVANTAGE - Since the system performs double network address translation, network services are selectively provided and managed by regulating access to the services and by balancing loads associated with the service.

DESCRIPTION OF DRAWING(S) - The figure shows a flow diagram explaining the process of selectively managing network services.

pp: 15 DwgNo 5/70

Title Terms: NETWORK; SERVICE; MANAGEMENT; SYSTEM; WEB; CONTENT; TRANSLATION; CLIENT; IDENTIFY; VIRTUAL; SOURCE; IDENTIFY; VIRTUAL; IDENTIFY; ACTUAL; IDENTIFY; SERVICE; REQUEST; CLIENT; TRANSMIT; INTENDED; SERVE

Derwent Class: T01

International Patent Class (Main): G06F-015/16; H04L-029/06

File Segment: EPI

7/5/3 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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015561260 \*\*Image available\*\*

WPI Acc No: 2003-623416/200359

Method of processing ftp packet in nat router

Patent Assignee: LG ELECTRONICS INC (GLDS )

Inventor: CHOI H U

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
KR 2003034396	A	20030509	KR 200165318	A	20011023	200359 B

Priority Applications (No Type Date): KR 200165318 A 20011023

Patent Details:

Patent No	Kind	Lan	Pg	Main	IPC	Filing Notes
KR 2003034396	A		1	H04L-012/56		

Abstract (Basic): KR 2003034396 A

NOVELTY - A method of processing an FTP ( File Transfer Protocol ) in an NAT ( Network Address Translation ) router is provided to independently manage an IP translation table in order to process the FTP packet having a TCP(Transmission Control Protocol) packet type, thereby improving IP translation performance.

DETAILED DESCRIPTION - When a packet is received in an NAT router(S21), the NAT router analyzes an IP header of the received packet, and confirms whether a protocol type is a TCP type or a UDP type(S22,S23). If the protocol type is the UDP type, the NAT router performs a general UDP packet processing by using a UDP translation table(S24). If the type is the TCP type, the NAT router analyzes a

destination port number of a TCP header, and confirms whether the number is a TCP packet or an **FTP** packet(S25,S26). If the number is the TCP packet, the **NAT** router performs a general TCP packet processing by using a TCP translation table(S27). If the number is the **FTP** packet, the **NAT** router performs an **FTP** packet processing by using an **FTP** translation table operated independently from the TCP translation table(S28).

pp; 1 DwgNo 1/10

Title Terms: METHOD; PROCESS; PACKET; ROUTER

Derwent Class: W01

International Patent Class (Main): H04L-012/56

File Segment: EPI

7/5/4 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015503305 \*\*Image available\*\*

WPI Acc No: 2003-565452/200353

**Internet protocol conversion apparatus using parallel NAT -PT and Internet protocol conversion method using the same**

Patent Assignee: HUNEED TECHNOLOGIES (HUNE-N); HUNEED TECHNOLOGIES LTD (HUNE-N)

Inventor: EOM Y G; KIM J H; PARK B S; SIM J B; SHIM J B; UHM Y G

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
KR 2003018445	A	20030306	KR 200152172	A	20010828	200353 B
KR 411517	B	20031218	KR 200152172	A	20010828	200425

Priority Applications (No Type Date): KR 200152172 A 20010828

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
-----------	------	--------	----------	--------------

KR 2003018445	A	1	H04L-029/06	
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KR 411517	B		H04L-029/06	Previous Publ. patent KR 2003018445
-----------	---	--	-------------	-------------------------------------

Abstract (Basic): KR 2003018445 A

**NOVELTY** - An Internet protocol conversion apparatus using parallel **NAT** -PT and Internet protocol conversion method using the same are provided to realize a **NAT** -PT of a small-sized integrated circuit using a system on chip technology and to process **NAT** -PT modules in parallel.

**DETAILED DESCRIPTION** - A PHY chip (501) checks and processes a protocol of a layer 1 and an error of a packet surrounded by an electrical signal. A MAC (502) converts a protocol of a layer 2 into a protocol of a layer 3 using a signal from the PHY chip. An IP multiplexer/demultiplexer (503) distributes a packet from the MAC into an empty **NAT** -PT modules (505,506) and stores a packet of a standby state in an IP packet buffer (504). An SIIT (505) performs a header and address conversion operation between an IPv4 packet and an IPv6 packet using a packet from the IP multiplexer/demultiplexer. A DNS/ **FTP** ALG (506) receives a DNS/ **FTP** packet from a packet output from the IP multiplexer/demultiplexer and sends a DNS query packet to a DNS server in order to find an IP address and update a mapping table. A mapping table module (507) stores a pole of an IPv4 address necessary for the modules (505,506) and stores a mapping table between IPv4 and IPv6 addresses generated from the modules (505,506).

File 275:Gale Group Computer DB(TM) 1983-2004/Dec 17  
(c) 2004 The Gale Group  
File 621:Gale Group New Prod.Annou.(R) 1985-2004/Dec 17  
(c) 2004 The Gale Group  
File 636:Gale Group Newsletter DB(TM) 1987-2004/Dec 17  
(c) 2004 The Gale Group  
File 16:Gale Group PROMT(R) 1990-2004/Dec 17  
(c) 2004 The Gale Group  
File 160:Gale Group PROMT(R) 1972-1989  
(c) 1999 The Gale Group  
File 148:Gale Group Trade & Industry DB 1976-2004/Dec 17  
(c) 2004 The Gale Group  
File 624:McGraw-Hill Publications 1985-2004/Dec 17  
(c) 2004 McGraw-Hill Co. Inc  
File 15:ABI/Inform(R) 1971-2004/Dec 17  
(c) 2004 ProQuest Info&Learning  
File 647:cmp Computer Fulltext 1988-2004/Dec W1  
(c) 2004 CMP Media, LLC  
File 674:Computer News Fulltext 1989-2004/Nov W4  
(c) 2004 IDG Communications  
File 696:DIALOG Telecom. Newsletters 1995-2004/Dec 17  
(c) 2004 The Dialog Corp.  
File 369:New Scientist 1994-2004/Dec W1  
(c) 2004 Reed Business Information Ltd.  
File 810:Business Wire 1986-1999/Feb 28  
(c) 1999 Business Wire  
File 813:PR Newswire 1987-1999/Apr 30  
(c) 1999 PR Newswire Association Inc  
File 610:Business Wire 1999-2004/Dec 13  
(c) 2004 Business Wire.  
File 613:PR Newswire 1999-2004/Dec 17  
(c) 2004 PR Newswire Association Inc

Set	Items	Description
S1	50236	NAT OR NETWORK() ADDRESS() TRANSLAT?????
S2	74151	FTP OR FILE() TRANSFER() PROTOCOL
S3	10725	(EXTERNAL OR ROUTABLE OR PUBLIC) (2W) (ADDRESS OR ADDRESSES)
S4	5213	(INTERNAL OR NONROUTABLE OR (NON OR "NOT") () ROUTABLE OR PRIVATE) (2W) (ADDRESS OR ADDRESSES)
S5	41	S1(50N)S2(50N)S3(50N)S4
S6	27	RD (unique items)
S7	1206	SECUR???(2W)S2
S8	5	S7(50N)S1
S9	5	RD (unique items)

6/3,K/1 (Item 1 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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02779128 SUPPLIER NUMBER: 114484557 (USE FORMAT 7 OR 9 FOR FULL TEXT)

)

Little Boxes, Big Bite -- An all-in-one security device will let your small site run with the big dogs. (Product/Service Evaluation)

Smith, Hugh

Network Computing, 61

March 18, 2004

DOCUMENT TYPE: Product/Service Evaluation ISSN: 1046-4468

LANGUAGE: English RECORD TYPE: Fulltext

WORD COUNT: 4563 LINE COUNT: 00367

... test plan. First, we outfitted our small-office network with one WAN interface and one **public IP address**. Internally, our small office had a local network with **private IP addresses** and a DMZ for Web, e-mail and **FTP** servers. Our LAN users were configured using DHCP, and the security devices provided **NAT (Network Address Translation)** for both DMZ and LAN traffic. The devices also were responsible for port forwarding of...

...us and the outside world, so they had to have firewall features, including traffic filtering, **NAT** and port forwarding. Stateful firewall features for preventing DoS (denial-of-service) attacks, like syn...

...the devices' in-stream antivirus functionality-meaning the device scans incoming e-mail (and possibly **FTP** and Web traffic) for viruses. This scanning is similar to what your desktop antivirus software...

6/3,K/2 (Item 2 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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02703456 SUPPLIER NUMBER: 99614809 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Lesson 177: Network Address Translation.

Steinke, Steve

Network Magazine, 22

April 1, 2003

ISSN: 1093-8001 LANGUAGE: English RECORD TYPE: Fulltext

WORD COUNT: 2033 LINE COUNT: 00166

... design of the IPv4 address space assumed a single addressing realm for the entire Internet. **NAT** enables anyone to create separate, private address realms, with NAT devices serving as the gateways...using Network Address Port Translation (NAPT), sometimes known as Port Address Translation.

For NAPT, the **NAT** router must keep track of how the internal **private addresses** map to particular ports on the outward-facing IP address. Of course, at any given...

...active, which would require the router to keep track of all these connections (see figure).

#### NAT ADVANTAGES

**NAT** succeeds in doing its primary job-saving IP addresses. In many circumstances, it also...want static, globally significant IP addresses. Changing ISPs and multihoming are also easier tasks if **private IP addresses** are employed, because only the outward-facing addresses must be taken into consideration. However, if two organizations employing overlapping **private IP addresses** merge, at least one of them will have to undergo full-scale renumbering.

**NAT** has a number of niggling disadvantages that keep vendors on their toes correcting for this...widespread technology. It's tricky, but not impossible, to operate globally-visible servers behind a **NAT** (or NAPT) router. In general, connections that initiate on the public side of the NAPT device will have difficulty hooking up with services on the

private network. (One-to-one NAT devices that bind **internal addresses** statically to **public addresses** will work normally.) Keep in mind that services on the private network may include...**ftp**. In general, applications that separate out a signaling function from the transport function, as **ftp** does, may

6/3,K/3 (Item 3 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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02382625 SUPPLIER NUMBER: 60081384 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**COMMS SERVER + 10BASET HUB + NETWORKING SOFTWARE + ISDN/T-1 = PRAXON'S PDX.** (Praxon PDX communications server) (Hardware Review) (Evaluation)  
GREEN, ANDY  
Teleconnect, 18, 3, 22  
March, 2000  
DOCUMENT TYPE: Evaluation ISSN: 0740-9354 LANGUAGE: English  
RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 2136 LINE COUNT: 00156

... checked out the PPP (Point-to-Point Protocol) connection info, and retrieved the PDX's **external address**. Unfortunately, my luck didn't hold: I tried Telnetting, surfing, and, finally, pinging on this...

...told them to am-scray.

Too bad. I wanted to try out the PDX's **NAT** capabilities. **Network address translation** is a protection mechanism that shields your intranet from hacking attempts by non-law-abiding citizens of the Internet. Instead of accepting multiple **internal IP addresses** of your HTTP, **FTP**, or Telnet servers, and possibly opening your site to a "spoofing" attack (see Newton's Telecom Dictionary 15th ed., page 737), **NAT** restricts connections to only a single "**public**" **address**, replacing the "fake" address with the real hidden address of that server, so packets can...

6/3,K/4 (Item 4 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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02377145 SUPPLIER NUMBER: 59638115 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Protocols support home gateway apps.** (Technology Information)  
Thomas, Tracy T.  
Electronic Engineering Times, 98  
Feb 28, 2000  
ISSN: 0192-1541 LANGUAGE: English RECORD TYPE: Fulltext  
WORD COUNT: 1564 LINE COUNT: 00120

... Translation protocol allows a private network to be maintained behind a gateway acting as a **NAT** router. The gateway translates the address information of the private node to a globally unique...

...network. This means that the IP addresses inside the private domain can be the reusable **private addresses** specified by RFC 1918.

When the first outgoing session is initiated from a private host, the host's **private address** is mapped to a globally unique address by the **NAT** router. This global address is bound so that all sessions originating from the private host...

...sessions from the private network is limited by the number of available global addresses. Basic **NAT** allows a pool of global addresses to be shared by devices on a private network...

...address of the private host and the TCP/UDP port of the outgoing packet. The **private host IP address** is translated to the **external IP address** of the **NAT** router. A table is maintained in the **NAT** router to keep track of sessions from each host in the private network. **NAPT** allows...

...number of sessions is limited only by the size of the translation table in the **NAT** router. The address binding in NAPT involves translation from the **private address** and private port to a global address and global port. The TCP/UDP port concept...IP address information into the data payload of the packet. Examples of such protocols are **FTP** , in which the data session parameters are specified in the data of the control session...

6/3,K/5 (Item 5 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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02374955 SUPPLIER NUMBER: 59599946 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**WebRamp 700S. (Ramp Networks Inc network security software) (Software Review) (Evaluation)**  
Internet Magazine, 136  
Feb, 2000  
DOCUMENT TYPE: Evaluation ISSN: 1355-6428 LANGUAGE: English  
RECORD TYPE: Fulltext  
WORD COUNT: 496 LINE COUNT: 00043

... updates regularly.

The WebRamp 700S operates either in screening mode, where your users have **Internet- routable P addresses** , or in **Network Address Translation ( NAT ) mode**--where they're given **private addresses** .

By default, the program blocks all incoming connections to computers on your network, but permits...

...from known 'denial of service attacks. You can open holes in the firewall for individual **FTP** , **SMTP** , **POP3** , **ONS** and **HTTP** servers on your network. It's also easy to block...

...WebRamp 700S  
Price (pounds)399 (5 users) (pounds)645 (25 users)  
Pros Web-configuration interface, **NAT** support, built-in DHCP server, optional content filtering, good performance  
Cons Only 10Mbps at present...

6/3,K/6 (Item 6 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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02326470 SUPPLIER NUMBER: 55603473 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Netopia Introduces S9500 Security Appliance, an All-in-One Solution That Optimizes Broadband DSL Connections for e-Commerce and Extranets. (network management device) (Product Announcement)**  
Cambridge Telecom Report, NA  
August 30, 1999  
DOCUMENT TYPE: Product Announcement LANGUAGE: English  
RECORD TYPE: Fulltext  
WORD COUNT: 1478 LINE COUNT: 00128

... the header information in the packets and directs them accordingly.  
- The S9500 can run in **NAT** mode or transparent mode. In **NAT** mode, the following mapping services are available:  
--Mapped IP, where secure IP addresses on an...

...can be mapped to a set of externally registered IP addresses.  
--Virtual IP, where an **external IP address** can be mapped to multiple **internal IP addresses** (this is useful when a site has only one IP address but needs to allow Internet users to access its internal Web Server, **ftp** server, etc...).

In transparent mode, the S9500 Security Appliance is invisible to networks and requires...

6/3,K/7 (Item 7 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)  
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02239329 SUPPLIER NUMBER: 21173284 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**SonicWall 1.8: Versatile, Low-Cost Firewall. (Sonic Systems SonicWall 1.81)**  
(Software Review) (Evaluation)  
Beckman, Mel  
Macworld, v15, n11, p49(1)  
Nov, 1998  
DOCUMENT TYPE: Evaluation ISSN: 0741-8647 LANGUAGE: English  
RECORD TYPE: Fulltext  
WORD COUNT: 610 LINE COUNT: 00054

... addresses automatically.

The SonicWall operates either in screening mode, where your users all have Internet- **routeable IP addresses**, or in **network - address - translation (NAT)** mode, where your users all get **private addresses**. In screening mode, telecommuters can log in through the firewall; the more-secure **NAT** mode prohibits telecommuter access and requires only a single Internet- **routeable IP address**.

By default, the SonicWall blocks all incoming connections to computers on your LAN but permits...

...protection enhancements become available. You can also optionally open holes in the firewall for individual **FTP**, **SMTP**, **POP3**, **DNS**, and **HTTP** servers on your LAN. A dynamic port-configuration option lets...

**6/3,K/8 (Item 8 from file: 275)**  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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02087686 SUPPLIER NUMBER: 19652815 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Return to sender, address unknown? (Network Address Translation disguises addresses) (Internet/Web/Online Service Information)**  
Dutcher, William  
PC Week, v14, n33, p119(1)  
August 4, 1997  
ISSN: 0740-1604 LANGUAGE: English RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 1275 LINE COUNT: 00101

... delivery.

Many firewalls change the source address of all outgoing IP datagrams to their single **external IP address**. The firewall or router may be configured to change the source address to one of...

...valid IP network number from which the externally visible firewall address will be taken. With **NAT**, relatively few "real" addresses can represent a much larger number of hidden, **internal addresses**.

In addition to substituting a different source IP address for outbound traffic and a different destination address for incoming traffic, the router or firewall doing **NAT** must recalculate and rewrite the 16-bit frame check fields of both the TCP and the IP headers of each IP datagram. **NAT** has other exotic implications for the headers written by **FTP** and **ICMP** (Internet Control Message Program), but they're now well-understood and handled readily...

**6/3,K/9 (Item 1 from file: 621)**  
DIALOG(R)File 621:Gale Group New Prod.Annou. (R)  
(c) 2004 The Gale Group. All rts. reserv.

01406673 Supplier Number: 46558839 (USE FORMAT 7 FOR FULLTEXT)  
**AbhiWeb Corp. Unveils New Family of Secure, Plug-and-Play Internet Access Servers; Ideal Turnkey Hardware and Software Solution for Small and Medium-Sized Companies.**  
Business Wire, p07221094  
July 22, 1996

Language: English Record Type: Fulltext  
Document Type: Newswire; Trade  
Word Count: 772

... AFS 2000's application-level proxy firewall supports secure use of the World Wide Web, **FTP**, Telnet, e-mail, News, and Gopher. The AFS 2000's firewall performs automatic **network address translation** from **private IP addresses** to a single **public IP address**. Access control, as well as reporting, are managed through the AFS 2000's easy-to...

...with all popular SMTP/POP3 clients such as Microsoft Exchange, Eudora, Netscape Navigator, OnNet from **FTP Software, Inc.**, and NetManage, Inc.'s Chameleon. User E-mail accounts can be easily set...

6/3,K/10 (Item 1 from file: 636)  
DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

05890226 Supplier Number: 123529660 (USE FORMAT 7 FOR FULLTEXT)

**Network security.**

Broadcast Engineering, v46, n10, pNA  
Oct 1, 2004

Language: English Record Type: Fulltext  
Document Type: Magazine/Journal; Trade  
Word Count: 1503

... so that security threats from the Internet can be analyzed  
A firewall can conceal the **private IP address** of your workstation from prying eyes on the Internet. This is called **network address translation (NAT)**. In the example shown in Figure 2, the **public Internet address** of the corporate firewall is 67.243.12.80. Workstations on the private network all use the 10.0.0.0 **private address space**. Someone trying to probe the port of a workstation from the Internet would not...

...rules different from the rest of the company network. For example, the firewall may allow **FTP** across a DMZ to an **FTP server**, but it might not allow any workstations to use **FTP**.

Administrators can configure firewalls...

6/3,K/11 (Item 2 from file: 636)  
DIALOG(R)File 636:Gale Group Newsletter DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

03200464 Supplier Number: 46559391 (USE FORMAT 7 FOR FULLTEXT)  
**ABHIWEB: AbhiWeb Corp. Unveils new family of secure, plug-and-play Internet access servers**  
M2 Presswire, pN/A  
July 22, 1996  
Language: English Record Type: Fulltext  
Document Type: Newswire; Trade  
Word Count: 824

... AFS 2000's application-level proxy firewall supports secure use of the World Wide Web, **FTP**, Telnet, e-mail, News, and Gopher. The AFS 2000's firewall performs automatic **network address translation** from **private IP addresses** to a single **public IP address**. Access control, as well as reporting, are managed through the AFS 2000's easy-to...

...with all popular SMTP/POP3 clients such as Microsoft Exchange, Eudora, Netscape Navigator, OnNet from **FTP Software, Inc.**, and NetManage, Inc.'s Chameleon. User E-mail accounts can be easily set...

6/3,K/12 (Item 1 from file: 16)  
DIALOG(R)File 16:Gale Group PROMT(R)

(c) 2004 The Gale Group. All rts. reserv.

06497525 Supplier Number: 55195103 (USE FORMAT 7 FOR FULLTEXT)  
**Check Point: Response to firewall RFP. (Check Point FireWall) (Product Information)**  
Network World, pNA  
July 19, 1999  
Language: English Record Type: Fulltext  
Document Type: Magazine/Journal; Trade  
Word Count: 2223

... concurrent connections, more than sufficient to meet Happy Pharmaceuticals' requirements, now and in the future.

#### **Network Address Translation**

The advanced **network address translation (NAT)** capability of FireWall-1 supports all applications and services, including H.323 applications. In addition, **NAT** works seamlessly with the virtual private networking (VPN) capability of Check Point VPN solutions. For...

...host uses an illegal IP address. Additionally, throughput performance is not significantly degraded when deploying **NAT**.

There are two modes of operation for **NAT**: dynamic mode and static mode. Dynamic **NAT** provides users access to the Internet while conserving registered IP addresses and hiding the actual...

...uses a single IP address to hide all internal network resources. An unlimited number of **internal IP addresses** can be mapped to a single **public IP address**. Since the IP address used in dynamic mode is used only for outbound communication and...

...requirement and provides a one-to-one assignment between the published IP address and the **internal IP address**. Static mode would typically be implemented when administrators did not wish to expose the real...

**6/3,K/13 (Item 2 from file: 16)**  
DIALOG(R)File 16:Gale Group PROMT(R)  
(c) 2004 The Gale Group. All rts. reserv.

06497499 Supplier Number: 55195075 (USE FORMAT 7 FOR FULLTEXT)  
**BorderWare: Response to firewall RFP.**  
Network World, pNA  
July 19, 1999  
Language: English Record Type: Fulltext  
Document Type: Magazine/Journal; Trade  
Word Count: 1570

... Server is an application proxy Firewall and includes built-in proxies for the required applications ( **FTP** and **HTTP**). Configuring the Firewall for these applications is simply a matter of enabling the...

...configured proxies.

The BorderWare Firewall Server also includes built-in proxies for other common applications ( **FTP**, **PopMail**, **NNTP** **Real Audio** etc). For user-developed applications the BorderWare Firewall Server includes a...

...proxy. The user-definable proxy can be customised to support any TCP or UDP application.

#### **Network Address Translation**

The BorderWare Firewall Server includes **Network Address Translation (NAT)** as standard. In addition (as discussed in the Integrated Services section of this response) BorderWare provides a Dual DNS ensuring that the **internal** and **external address** spaces are separated not only at the network level, but are also maintained in separate...

**6/3,K/14 (Item 3 from file: 16)**

DIALOG(R)File 16:Gale Group PROMT(R)  
(c) 2004 The Gale Group. All rts. reserv.

05954316 Supplier Number: 53220636 (USE FORMAT 7 FOR FULLTEXT)  
**Seven Firewalls Fit for Your Enterprise. (Hardware Review) (Software Review) (Evaluation)**

Morrissey, Peter  
Network Computing, p71(1)  
Nov 15, 1998  
Language: English Record Type: Fulltext  
Article Type: Evaluation  
Document Type: Magazine/Journal; Trade  
Word Count: 5315

... is difficult enough without adding another layer of complexity. Keep in mind that when using **NAT ( Network Address Translation )**, you will run into similar complexities when attempting to diagnose problems, since the packet header...base of operation for completely undermining the integrity of the firewall.

All seven products performed **NAT**, which hides the addresses of all devices initiating connections from inside your network by converting their source address to the firewall's **external address**. This is a necessity if you change ISPs and don't own your own address...

...you want to allow outside access to servers inside your network, you can provide additional **external addresses** that are directly mapped to the corresponding **internal address**.

A firewall is an obvious place to set up VPNs. All the firewalls we tested...

...its stateful inspection capabilities approach those of a proxy firewall. For example, in addition to **NAT**, it offers user authentication and defends against SYN and packet-fragmentation attacks. **FTP** restrictions can be implemented based on "put" and "get" commands as well as file names

...

**6/3,K/15 (Item 1 from file: 15)**

DIALOG(R)File 15:ABI/Inform(R)  
(c) 2004 ProQuest Info&Learning. All rts. reserv.

02808194 720704911  
**Network security**  
GILMER, BRAD  
Broadcast Engineering v46n10 PP: 28-32 Oct 2004  
ISSN: 0007-1994 JRNL CODE: BRG  
WORD COUNT: 1417

...TEXT: so that security threats from the Internet can be analyzed

A firewall can conceal the **private IP address** of your workstation from prying eyes on the Internet. This is called **network address translation ( NAT )**. In the example shown in Figure 2, the **public Internet address** of the corporate firewall is 67.243.12.80. Workstations on the private network all use the 10.0.0.0 **private address** space. Someone trying to probe the port of a workstation from the Internet would not...

... rules different from the rest of the company network. For example, the firewall may allow **FTP** across a DMZ to an **FTP** server, but it might not allow any workstations to use **FTP**.

Administrators can configure firewalls...

**6/3,K/16 (Item 2 from file: 15)**

DIALOG(R)File 15:ABI/Inform(R)  
(c) 2004 ProQuest Info&Learning. All rts. reserv.

02394262 143994241

Ask Dr. Intranet

Blass, Steve

Network World v19n30 PP: 31 Jul 29, 2002

ISSN: 0887-7661 JRNLD CODE: NWW

WORD COUNT: 227

TEXT: We want to set up an **FTP** server for our network of 15 PCs. We had dynamic IP addresses in our Cisco...

...IP addresses to your internal network using DHCP configuration. Give the **FTP** server a fixed **private IP address** in your network and map requests for your fixed **public** **FTP** **address** to the **internal address** using **network address translation (NAT)**. Establish a **NAT** entry in the Cisco 678 using the "set nat . . ." commands of the Cisco Broadband Operating System. Enable **NAT** with the "set nat enable" command. Then establish the **NAT** mapping for your **FTP** server using the "set nat entry add internal-IP internal-PORT external-IP externalPORT tcp." A link to a configuration...

6/3,K/17 (Item 3 from file: 15)  
DIALOG(R)File 15:ABI/Inform(R)  
(c) 2004 ProQuest Info&Learning. All rts. reserv.

02145666 69895804

**Anatomy of an attack: A race against time**

Tuesday, Vince

Computerworld v35n12 PP: 57 Mar 19, 2001

ISSN: 0010-4841 JRNLD CODE: COW

WORD COUNT: 1415

...TEXT: that separates public-facing machines such as Web servers, Simple Mail Transfer Protocol servers and **file transfer protocol** servers from the **private** corporate LAN. Any connections between these servers and the internal LAN...

... inside the firewall from being attacked from the public servers if they are ever compromised.

**NAT : Network Address Translation** is a service that lets you simplify an internal network by making external machines appear to have **internal IP addresses**. By translating an **external IP address** to an internal one, there's no need to reconfigure the external machines. LINKS:

www...

... posted at Infowar.com Ltd.'s InfoSec and InfoWar Portal Web site. [www.dalantech.com/nat.shtml](http://www.dalantech.com/nat.shtml): For more on **NAT**, see " **Network Address Translation** for Beginners" on the Da LAN Tech Web site. This site, dedicated to network news...

6/3,K/18 (Item 4 from file: 15)  
DIALOG(R)File 15:ABI/Inform(R)  
(c) 2004 ProQuest Info&Learning. All rts. reserv.

01394754 00-45741

**A natty solution to a knotty problem**

Trowbridge, Dave

Computer Technology Review v17n2 PP: 1, 6+ Feb 1997

ISSN: 0278-9647 JRNLD CODE: CTN

WORD COUNT: 1844

...TEXT: <http://www.gta.com>). These products are based on RFC 1631, an IETF standard for **network address translation**; by contrast, most firewalls that claim **NAT** capabilities merely map addresses to highnumbered ports on the firewall, which limits the number of connections possible and introduces complications for protocols such as **FTP**. Both of these products are capable of retaining stateful information about

ordinarily stateless protocols such as **FTP** for security purposes; the **GNAT Box**, however, is a full-fledged firewall while the **Cisco** product is specifically for **NAT** purposes, designed to be used in combination with other security solutions.

When a **NAT** gateway receives a packet from an internal computer, it extracts the source address and compares it to an internal translation table. If the computer's **internal address** isn't there, a new translation is created. From then on, the source address of...

... checksums on the packet can be quickly updated without complete recalculation since the difference between **internal** and **external addresses** is known.

By contrast to a proxy solution, using a **NAT** gateway requires some calculation as to the maximum number of internal hosts likely to connect...

...have developed heuristics to aid in this process. With a proxy, there is only one **external IP address** which can handle as many connections as the processing power of the gateway computer permits...

6/3,K/19 (Item 5 from file: 15)  
DIALOG(R)File 15:ABI/Inform(R)  
(c) 2004 ProQuest Info&Learning. All rts. reserv.

01269926 99-19322  
**Hack, whack, attack**  
Vegvari, Ted  
Computerworld v30n33 PP: 77 Aug 12, 1996  
ISSN: 0010-4841 JRNLD CODE: COW  
WORD COUNT: 415

...TEXT: and its reporting and management tools met our requirements.

All the products we tested completed **network address translation (NAT)** tests performed by using Hypertext Transfer Protocol (HTTP), **file transfer protocol (FTP)** and Post Office Protocol-3 (POP-3). An example of such a test would be...

... another machine and impersonate IP addresses, we recommend a challenge/response whenever possible.

We used **NAT** when we left the protected network area. We verified that **private IP addresses** were translated into **public addresses** by analyzing the access logs on the World Wide Web server and **FTP** server to verify that only the translated address was captured.  
Preparation counts

The greatest challenges...

6/3,K/20 (Item 1 from file: 647)  
DIALOG(R)File 647:cmp Computer Fulltext  
(c) 2004 CMP Media, LLC. All rts. reserv.

01274242 CMP ACCESSION NUMBER: NWC20040318S0021  
**Little Boxes, Big Bite - An all-in-one security device will let your small site run with the big dogs**  
Hugh Smith with Scott Thomas and the CalPoly NetPRL Testing Team  
NETWORK COMPUTING, 2004, n 1505, PG61  
PUBLICATION DATE: 040318  
JOURNAL CODE: NWC LANGUAGE: English  
RECORD TYPE: Fulltext  
SECTION HEADING: Review  
WORD COUNT: 4234

... test plan. First, we outfitted our small-office network with one

WAN interface and one **public IP address**. Internally, our small office had a local network with **private IP addresses** and a DMZ for Web, e-mail and **FTP** servers. Our LAN users were configured using DHCP, and the security devices provided **NAT** ( **Network Address Translation** ) for both DMZ and LAN traffic. The devices also were responsible for port forwarding of...

...us and the outside world, so they had to have firewall features, including traffic filtering, **NAT** and port forwarding. Stateful firewall features for preventing DoS (denial-of-service) attacks, like syn...

...the devices' in-stream antivirus functionality-meaning the device scans incoming e-mail (and possibly **FTP** and Web traffic) for viruses. This scanning is similar to what your desktop antivirus software...

6/3,K/21 (Item 2 from file: 647)  
DIALOG(R)File 647:CMP Computer Fulltext  
(c) 2004 CMP Media, LLC. All rts. reserv.

01210401 CMP ACCESSION NUMBER: EET20000228S0067

**Protocols support home gateway apps**

Tracy T. Thomas, Software Engineer, U.S. Software Corp., Hillsboro, Ore.  
ELECTRONIC ENGINEERING TIMES, 2000, n 1102, PG98

PUBLICATION DATE: 000228

JOURNAL CODE: EET LANGUAGE: English

RECORD TYPE: Fulltext

SECTION HEADING: Embedded Systems - Focus: The Embedded Internet

WORD COUNT: 1480

... Translation protocol allows a private network to be maintained behind a gateway acting as a **NAT** router. The gateway translates the address information of the private node to a globally unique...

...network. This means that the IP addresses inside the private domain can be the reusable **private addresses** specified by RFC 1918.

When the first outgoing session is initiated from a private host, the host's **private address** is mapped to a globally unique address by the **NAT** router. This global address is bound so that all sessions originating from the private host...

...sessions from the private network is limited by the number of available global addresses. Basic **NAT** allows a pool of global addresses to be shared by devices on a private network...

...address of the private host and the TCP /UDP port of the outgoing packet. The **private host IP address** is translated to the **external IP address** of the **NAT** router. A table is maintained in the **NAT** router to keep track of sessions from each host in the private network. NAPT allows...

...number of sessions is limited only by the size of the translation table in the **NAT** router. The address binding in NAPT involves translation from the **private address** and private port to a global address and global port. The TCP/UDP port concept...IP address information into the data payload of the packet. Examples of such protocols are **FTP**, in which the data session parameters are specified in the data of the control session

...

6/3,K/22 (Item 3 from file: 647)  
DIALOG(R)File 647:CMP Computer Fulltext  
(c) 2004 CMP Media, LLC. All rts. reserv.

01178775 CMP ACCESSION NUMBER: NWC19981115S0019

**Seven Firewalls Fit for Your Enterprise**

Peter Morrissey

NETWORK COMPUTING, 1998, n 921, PG71

PUBLICATION DATE: 981115  
JOURNAL CODE: NWC LANGUAGE: English  
RECORD TYPE: Fulltext  
SECTION HEADING: Features  
WORD COUNT: 5311

... is difficult enough without adding another layer of complexity. Keep in mind that when using **NAT** ( **Network Address Translation** ), you will run into similar complexities when attempting to diagnose problems, since the packet header...base of operation for completely undermining the integrity of the firewall.

All seven products performed **NAT** , which hides the addresses of all devices initiating connections from inside your network by converting their source address to the firewall's **external address** . This is a necessity if you change ISPs and don't own your own address...

...you want to allow outside access to servers inside your network, you can provide additional **external addresses** that are directly mapped to the corresponding **internal address** .

A firewall is an obvious place to set up VPNs. All the firewalls we tested...

...its stateful inspection capabilities approach those of a proxy firewall. For example, in addition to **NAT** , it offers user authentication and defends against SYN and packet-fragmentation attacks. **FTP** restrictions can be implemented based on "put" and "get" commands as well as file names...

6/3,K/23 (Item 1 from file: 674)  
DIALOG(R)File 674:Computer News Fulltext  
(c) 2004 IDG Communications. All rts. reserv.

101816  
**Can we talk? VoIP's firewall challenges**  
Byline: DANIEL BRIERE AND BETH GAGE  
Journal: Network World  
Publication Date: June 25, 2002  
Word Count: 642 Line Count: 62

Text:  
... the problems with VoIP and firewalls is that VoIP doesn't really work well with **network address translation** ( **NAT** ) (sharing one **external IP address** among many internal computers). **NAT** is typically performed by the enterprise firewall, so a further tension exists between those trying...

... new voice-aware firewalls that can perform protocol "patches" needed to make VoIP work with **NAT** . There are two ways to adopt this approach: Discard the existing firewall and replace it...

... process incoming and outgoing voice streams. In this approach, the application gateway can see both **internal NAT address** space as well as the global address space and can "patch" VoIP protocol fields as...  
... It is similar to the way enterprises cope with security issues involved with e-mail, **FTP** , DNS and other applications that cross from the inside to the outside world. The overall...

6/3,K/24 (Item 2 from file: 674)  
DIALOG(R)File 674:Computer News Fulltext  
(c) 2004 IDG Communications. All rts. reserv.

092316  
**ThisWeek'sGlossary**  
Byline: Vince Tuesday

Journal: Computerworld Page Number: 57  
Publication Date: March 19, 2001  
Word Count: 209 Line Count: 21

Text:

... that separates public-facing machines such as Web servers, Simple Mail Transfer Protocol servers and **file transfer protocol** servers from the private corporate LAN. Any connections between these servers and the internal LAN...

... inside the firewall from being attacked from the public servers if they are ever compromised. **NAT : Network Address Translation** is a service that lets you simplify an internal network by making external machines appear to have **internal IP addresses**. By translating an **external IP address** to an internal one, there's no need to reconfigure the external machines. [www.infowar...](http://www.infowar.com)

... posted at Infowar.com Ltd.'s InfoSec and InfoWar Portal Web site. [www.dalantech.com/nat.shtml](http://www.dalantech.com/nat.shtml): For more on **NAT**, see " **Network Address Translation** for Beginners" on the Da LAN Tech Web site. This site, dedicated to network news...

6/3,K/25 (Item 3 from file: 674)  
DIALOG(R)File 674:Computer News Fulltext  
(c) 2004 IDG Communications. All rts. reserv.

053823

**hack, whack, attack**

**Buyer's Guide**

**Fledgling NT firewalls guard their ground well in a review conducted for Computerworld by PC Lab**

Byline: Ted Vegvari

Journal: Computerworld Page Number: 77

Publication Date: August 12, 1996

Word Count: 3004 Line Count: 290

Text:

...and its reporting and management tools met our requirements.

All the products we tested completed **network address translation** (**NAT**) tests performed by using Hypertext Transfer Protocol (HTTP), **file transfer protocol** (**FTP**) and Post Office Protocol-3 (POP-3). An example of such a test would be...

... another machine and impersonate IP addresses, we recommend a challenge/response whenever possible.

We used **NAT** when we left the protected networkarea. We verified that **private IP addresses** were translated into **public addresses** by analyzing the access logs on the World Wide Web server and **FTP** server to verify that only the translated address was captured.

Preparation counts

The greatest challenges for...

6/3,K/26 (Item 1 from file: 810)  
DIALOG(R)File 810:Business Wire  
(c) 1999 Business Wire . All rts. reserv.

0605997 BW0082

**QUEENSTAKE RESOURCES: Queenstake Resources - Prospectus Received**

July 22, 1996

Byline: Business Editors

6/3,K/27 (Item 2 from file: 810)

DIALOG(R)File 810:Business Wire  
(c) 1999 Business Wire . All rts. reserv.

0605976 BW1170

**MOTO PHOTO: Moto Photo announces record six months earnings and record second quarter pre-tax income**

July 22, 1996

Byline: Business Editors

...stores, but in all of our stores as the visitors return home with their 'once in a lifetime' memories," Adler commented.

Adler concluded, "It is always gratifying to report **record earnings** , **particularly** when **they** are **so** much stronger than **the** previous **record** . If current trends continue, the last six months of the year will be the strongest...

File 8: Ei Compendex(R) 1970-2004/Dec W1  
     (c) 2004 Elsevier Eng. Info. Inc.  
 File 35: Dissertation Abs Online 1861-2004/Nov  
     (c) 2004 ProQuest Info&Learning  
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     (c) 2004 FIZ TECHNIK  
 File 438: Library Lit. & Info. Science 1984-2004/Oct  
     (c) 2004 The HW Wilson Co  
 File 256: TecInfoSource 82-2004/Nov  
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Set	Items	Description
S1	13137	NAT OR NETWORK() ADDRESS() TRANSLAT?????
S2	7997	FTP OR FILE() TRANSFER() PROTOCOL
S3	2347	(EXTERNAL OR ROUTABLE OR PUBLIC) (2W) (ADDRESS OR ADDRESSES)
S4	425	(INTERNAL OR NONROUTABLE OR (NON OR "NOT") () ROUTABLE OR PR- IVATE) (2W) (ADDRESS OR ADDRESSES)
S5	0	S1 AND S2 AND S3 AND S4
S6	0	S1 AND S2 AND S3:S4
S7	43	S1 AND S2
S8	38	RD (unique items)
S9	27	S8 AND (ADDRESS OR ADDRESSES)
S10	33	SECUR???(2W) S2
S11	0	S1 AND S10

9/5/1 (Item 1 from file: 8)  
DIALOG(R)File 8:EI Compendex(R)  
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07114131 E.I. No: EIP04478466102

**Title: Measuring up**

Author: Ling, Philip

Source: New Electronics v 37 n 17 Sep 28 2004. p 67-68

Publication Year: 2004

CODEN: NWELAC ISSN: 0047-9624

Language: English

Document Type: JA; (Journal Article) Treatment: G; (General Review)

Journal Announcement: 0411W4

**Abstract:** The embedded microprocessor benchmark consortium (EEMBC), a new benchmark consortium, provides a useful yardsticks for evaluating processors. The 'out of the box' benchmarking process is a measure of how well the processor handles generic code without any processor specific targeting. It makes for a good jumping off point in deciding whether a processor is fit for one's purpose and an indication of how much better it might perform when optimized. The IPmark is the normalized geometric mean of benchmark kernels measuring the device performance for Internet Protocol (IP) quality of service (QoS) and **network address translation** tasks (NAT). (Edited abstract)

Descriptors: \*Microprocessor chips; Benchmarking; Embedded systems; Servers; Integrated circuits; Buffer storage; Information analysis; Network protocols; Decision making; Standards; Internet; HTTP; Probabilistic logics

Identifiers: Embedded microprocessor consortium (EEMBC);

**Interconnectivity:** **File transfer protocol (FTP); Network address translation (NAT)**

Classification Codes:

714.2 (Semiconductor Devices & Integrated Circuits); 722.1 (Data Storage, Equipment & Techniques); 903.1 (Information Sources & Analysis); 912.2 (Management); 902.2 (Codes & Standards); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory))

714 (Electronic Components & Tubes); 912 (Industrial Engineering & Management); 722 (Computer Hardware); 903 (Information Science); 723 (Computer Software, Data Handling & Applications); 902 (Engineering Graphics; Engineering Standards; Patents); 721 (Computer Circuits & Logic Elements); 716 (Electronic Equipment, Radar, Radio & Television)

71 (ELECTRONICS & COMMUNICATION ENGINEERING); 91 (ENGINEERING MANAGEMENT); 72 (COMPUTERS & DATA PROCESSING); 90 (ENGINEERING, GENERAL)

9/5/3 (Item 3 from file: 8)

DIALOG(R)File 8:EI Compendex(R)  
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06804640 E.I. No: EIP04168113358

**Title: Implementation of NAT -PT/SIIT, enhanced ALGs and performance analysis**

Author: Lee, Joo-Chul; Shin, Myung-Ki; Kim, Hyoung-Jun

Corporate Source: Protocol Engineering Center Electronics and Telecom. Res. Inst., Daejon, South Korea

Conference Title: Proceedings of the International Conference on Internet Computing, IC'03

Conference Location: Las Vegas, NV, United States Conference Date: 20030623-20030626

Sponsor: CSREA; ITI; KSII; WAS

E.I. Conference No.: 62584

Source: Proceedings of the International Conference on Internet Computing v 2 2003.

Publication Year: 2003

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 0404W3

**Abstract:** This paper describes implementation of NAT -PT/SIIT (Network Address Translation - Protocol Translation) and some ALGs (Application

Level Gateway). We named this project as 6TALK (IPv6 TrAnsLator of Krv6). 6TALK implemented NAT -PT/SIIT, DSTM (Dual Stack Transition Mechanism), DNS-ALG and FTP -ALG. Those mechanisms we implemented are transition mechanisms which let IPv4 migrate to IPv6 smoothly. 6TALK provides several functions which enable IPv6 node at the edge of existing network to communicate with IPv4 node by using these transition mechanisms.

Transition mechanism like NAT -F uses IPv4/IPv6 header translation algorithm (SIIT). So, if we want to run some application which has IP address in its application protocol payload correctly we must have a specific ALG for that application. FTP and DNS are typical examples that have IP address in its payload. 6TALK has ALGs for FTP and DNS now. As implementation environment we adopt netfilter framework in Linux kernel-2.4.18. Netfilter framework is a new packet filtering mechanism introduced in kernel-2.4.18. So, we made use of netfilter framework to implement NAT -PT/SIIT. Since the main idea of NAT -PT comes from NAT our major interest in performance is relative performance compared by NATv4. We expected that the performance of NAT -PT would be worse than NATv4, but the difference of performance between NAT -PT and NATv4 was not much. 11 Refs.

Descriptors: \*Data communication systems; Network protocols; Gateways (computer networks); Routers; Packet switching; Internet

Identifiers: Performance analysis; Network address translation; Protocol translation; Application level gateway; Dual stack transition mechanism

Classification Codes:

723.2 (Data Processing); 722.3 (Data Communication, Equipment & Techniques); 723.5 (Computer Applications)

723 (Computer Software, Data Handling & Applications); 722 (Computer Hardware)

72 (COMPUTERS & DATA PROCESSING)

9/5/4 (Item 4 from file: 8)

DIALOG(R)File 8:EI Compendex(R)

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06184277 E.I. No: EIP02447178588

Title: On the implementation of a firewall based on Linux platform

Author: Fan, Xunli; Jing, Guangjun

Corporate Source: Dept. of Comp. Sci. and Technol. Nanjing Univ., Nanjing 210093, China

Source: Xibei Gongye Daxue Xuebao/Journal of Northwestern Polytechnical University v 20 n 3 August 2002. p 387-391

Publication Year: 2002

CODEN: XGDUE2 ISSN: 1000-2758

Language: Chinese

Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical); X; (Experimental)

Journal Announcement: 0211W1

Abstract: This paper presents a firewall system based on Linux - L-Firewall, which combines packet filter and proxy technology. Proxy and authentication are implemented on B1 level operating system. The paper emphasizes on the L-Firewall frame, especially on the implementation of packet filter module. L-Firewall provides not only HTTP, FTP proxy and packet filter, but also content filter, network address translation to protect network from IP spoofing and IP source route spoofing. L-Firewall tallies with GB/T17900-1999 and GB/T18020-1999. 3 Refs.

Descriptors: \*Computer system firewalls; Security systems; Computer operating systems; Computer networks; Wave filters; Protection

Identifiers: Linux platform; Packet filter model; Proxy; B1 level operating system

Classification Codes:

703.2 (Electric Filters); 723.2 (Data Processing); 914.1 (Accidents & Accident Prevention)

703 (Electric Circuits); 723 (Computer Software, Data Handling & Applications); 914 (Safety Engineering)

70 (ELECTRICAL ENGINEERING, GENERAL); 72 (COMPUTERS & DATA PROCESSING); 91 (ENGINEERING MANAGEMENT)

9/5/5 (Item 1 from file: 2)  
DIALOG(R) File 2:INSPEC  
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8208596

**Title:** It's all in the box [all-in-one gateways]  
**Author(s):** Doherty, S.  
**Journal:** Network Computing vol.15, no.17 p.68-9  
**Publisher:** CMP Media Inc,  
**Publication Date:** 2 Sept. 2004 **Country of Publication:** USA  
**CODEN:** NETCF7 **ISSN:** 1046-4468  
**SICI:** 1046-4468(20040902)15:17L.68:G;1-K  
**Material Identity Number:** H327-2004-020  
**Language:** English. **Document Type:** Journal Paper (JP)  
**Treatment:** Practical (P)

**Abstract:** Call them Swiss Army knives for your remote sites. All-in-one gateways are becoming all the rage for broadband SOHO and branch locations as combination LAN and WAN interconnect appliances. Smaller than bread boxes, AIOs act as hubs or switches that interconnect devices in a small office and route you to a WAN or the Internet. Most come with standard Ethernet 10/100Base-T ports and a wireless access point for sharing resources ranging from computers and PDAs to print servers and storage systems. And by routing traffic through your DSL or cable modem, they share the external connection with the devices on the LAN, using a DHCP server/client and **NAT** (network address translation). If your ISP requires authentication, you can use the AIOs' PPPoE (Point-to-Point Protocol over Ethernet) feature. They also support secure VPN connections and provide a packet-filtering firewall function. But you get what you pay for with these devices, which cost anywhere from \$50 to \$1,000. High-end AIO appliances, such as EmergeCore Networks' IT-100, come with more advanced features such as e-mail, file and print sharing, and **FTP** and **HTTP** services. You can also buy add-on services with antivirus, content-filtering and traffic-shaping features. Although AIOs come with basic log files, not even the high-end AIOs include advanced diagnostics and management, so troubleshooting can be tricky.

**Subfile:** D

**Descriptors:** broadband networks; client-server systems; internetworking; local area networks; network servers; protocols; wide area networks

**Identifiers:** all-in-one gateway; broadband SOHO; LAN interconnect appliance; WAN interconnect appliance; Internet; Ethernet 10/100Base-T port; wireless access point; resource sharing; print server; storage system; DHCP client server; network address translation; point-to-point protocol over Ethernet; VPN connection; packet-filtering firewall

**Class Codes:** D5020 (Computer networks and intercomputer communications in office automation)

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9/5/8 (Item 4 from file: 2)  
DIALOG(R) File 2:INSPEC  
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7348411 INSPEC Abstract Number: B2002-09-6210L-138, C2002-09-6150N-097  
**Title:** Linux based NAT -PT gateway implementation  
**Author(s):** Xiaoyu Zhao; Yan Ma  
**Author Affiliation:** Network Information Center, Beijing Univ. of Posts & Telecommun., China  
**Conference Title:** 2001 International Conferences on Info-Tech and Info-Net. Proceedings (Cat. No.01EX479) **Part vol.5** p.258-63 **vol.5**  
**Editor(s):** Zhong, Y.X.; Cui, S.; Wang, Y.  
**Publisher:** IEEE, Piscataway, NJ, USA  
**Publication Date:** 2001 **Country of Publication:** USA **6**  
**vol.(391+853+567+410+350+178) pp.**  
**ISBN:** 0 7803 7010 4 **Material Identity Number:** XX-2002-00255  
**U.S. Copyright Clearance Center Code:** 0-7803-7010-4/01/\$10.00  
**Conference Title:** 2001 International Conferences on Info-tech and

Info-net. Proceedings

Conference Sponsor: China Assoc. Sci. & Technol.(CAST); Chinese Inst. Electron. (CIE); IEEE Beijing Sect.; IEE Beijing Center; ATM Forum; Beijing Internet Inst.; IEEE Commun. Soc.; IEEE Comput. Soc.; IEEE Control Soc.; Global Inf. Infrastructure Commission (GIIC); World Federation of Eng. Organ. (WFEO); IFIP; Internet Eng. Task Force (IETF); Int. Council of Comput. Commun. (ICCC)

Conference Date: 29 Oct.-1 Nov. 2001 Conference Location: Beijing, China

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: **NAT -PT** is a scheme dedicated to serve the pure IPv4 host to communicate with the pure IPv6 host during the transition period of the Internet. We have implemented a full-functional **NAT -PT** gateway software based on RFC2765 and RFC2766, and some key upper-layer protocols such as HTTP, FTP and TELNET have been tested on it. We have also adopted several techniques in the gateway software implementation to get better performance and security. (20 Refs)

Subfile: B C

Descriptors: Internet; network operating systems; security of data; telecommunication security; transport protocols; Unix

Identifiers: **NAT -PT** gateway; IPv4 host; IPv6 host; Internet; RFC2765; RFC2766; protocols; HTTP; Linux; FTP ; TELNET; gateway software; performance; data security; **Network Address Translation**

Class Codes: B6210L (Computer communications); B6150M (Protocols); C6150N (Distributed systems software); C5620W (Other computer networks); C6130S (Data security); C5640 (Protocols)

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9/5/9 (Item 5 from file: 2)

DIALOG(R) File 2:INSPEC

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04388549 INSPEC Abstract Number: B9306-6210L-004, C9306-5620-004

Title: Extending the IP Internet through address reuse

Author(s): Tsuchiya, P.F.; Eng, T.

Author Affiliation: Bellcore, Morristown, NJ, USA

Journal: Computer Communication Review vol.23, no.1 p.16-33

Publication Date: Jan. 1993 Country of Publication: USA

CODEN: CCRED2 ISSN: 0146-4833

Language: English Document Type: Journal Paper (JP)

Treatment: Applications (A); Practical (P)

Abstract: The two most compelling problems facing the IP Internet are IP **address** depletion and scaling in routing. The paper discusses the characteristics of one of the proposed solutions, to place **Network**

**Address Translators (Nat)** at the borders of stub domains. Each **Nat** box has a small pool of globally unique IP **addresses** dynamically assigned to IP flows going through **Nat**. The dynamic assignment is coordinated with Domain Name Server operation. The IP **addresses** inside the stub domain are reused in other domains, thus solving the **address** depletion problem. The pool of IP **addresses** in **Nat** is from a subnet administered by the regional backbone, thus solving the scaling problem.

**Nat** can be installed without changes to any existing systems, although **FTP** will fail in some but not all instances. This paper presents a preliminary design for **Nat**, and discusses its merits and drawbacks. (7 Refs)

Subfile: B C

Descriptors: internetworking; network servers; telecommunication network routing

Identifiers: **address reuse**; IP Internet; **address depletion**; scaling; **Network Address Translators**; stub domains; dynamic assignment; Domain Name Server operation; subnet; regional backbone; design

Class Codes: B6210L (Computer communications); B6150P (Network design and planning); C5620 (Computer networks and techniques); C5630 (Networking equipment)

9/5/10 (Item 1 from file: 233)  
DIALOG(R)File 233:Internet & Personal Comp. Abs.  
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00678103 03NR01-113

**Building security by making holes**

Bradner, Scott

Network World , January 13, 2003 , v20 n2 p18, 1 Page(s)

ISSN: 0887-7661

Company Name: VanDyke Software

Languages: English

Document Type: Articles, News & Columns

Geographic Location: United States

Presents a list given by VanDyke Software on what should be eliminated in order to ensure enterprise network security. Indicates that these include: non-NT versions of Windows; password authentication; Telnet; Cleartext logon to any root or administrator account; **FTP (file transfer protocol)**; failure to provide end-user training in basic security policy and procedures; IT departments fighting against the proliferation of wireless network access points; and government studies on how to secure the Internet. Declares that the list is a good start, but a few things can be added such as: firewalls, because they just get people thinking that they do not have to practice good security hygiene; any **network address translator** that was installed for security reasons; and the Digital Millennium Copyright Act. (EPE)

Descriptors: Security; Network Security; Network Management; Security Measures; Wireless Networking; Online Services; Online Systems

Identifiers: VanDyke Software

9/5/11 (Item 2 from file: 233)

DIALOG(R)File 233:Internet & Personal Comp. Abs.  
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00645215 01NC10-216

**3Com Corp. 3Com Home Wireless Gateway**

Molta, Dave

Network Computing , October 29, 2001 , v12 n22 p54, 66, 2 Page(s)

ISSN: 1046-4468

Company Name: 3Com

URL: <http://www.3com.com>

Product Name: 3Com Home Wireless Gateway

Languages: English

Document Type: Hardware Review

Grade (of Product Reviewed): C

Geographic Location: United States

Presents a mixed review of 3Com Home Wireless Gateway (\$299), small office/home office (SOHO) wireless gateway from 3Com (408, 800). Explains that it integrates traditional **Network Address Translation (NAT)** routing capabilities with an 802.11b wireless access point. Cites excellent diagnostic capabilities, ability to restrict access to services by time of day, Web interface, wide area network (WAN) cable/DSL port, and WiFi compatibility. Mentions, however, that only electronic mail, Web, **File Transfer Protocol (FTP)**, Network News Transfer Protocol (NNTP), and telnet can be blocked and it does not provide port-forwarding capabilities or support for Demilitarized Zone (DMZ) hosts. Concludes that it is a good solution to SOHO networking. On a scale ranging from 0 to 5, received the rating of 3.10. Includes a table. (MEM)

Descriptors: Wireless Communication; Gateway; Wireless Networking; Broadband Communication; Small Business; Home Office; Internet Access  
Identifiers: 3Com Home Wireless Gateway; 3Com

9/5/16 (Item 7 from file: 233)

DIALOG(R)File 233:Internet & Personal Comp. Abs.  
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00513570 98NC11-109

**Firewalls -- Netscreen-100**  
Morrissey, Peter  
Network Computing , November 15, 1998 , v9 n21 p88-90, 2 Page(s)  
ISSN: 1046-4468

Company Name: NetScreen Technologies  
URL: <http://www.netscreen.com>  
Product Name: NetScreen-100  
Languages: English  
Document Type: Software Review  
Grade (of Product Reviewed): B  
Geographic Location: United States

Presents a favorable review of the NetScreen-100 (\$7,995) from NetScreen Technologies of CA (800, 408). States that it is based on a proprietary operating system and uses proprietary ASICs to provide a cost-efficient and easy to install firewall which requires only the assigning of IP **addresses** to the interfaces via a serial connection. Appreciates that its excellent performance was not negatively impacted once its **NAT (network address translation)** function was run. Likes that it can pass packets through without routing them. Expresses concern for its weak network access controls, adding that even its ability to perform URL and **FTP** filtering does not make it much more than a simple packet filtering device. (CAT)

Descriptors: Firewalls; Privacy; Security; TCP/IP  
Identifiers: NetScreen-100; NetScreen Technologies

9/5/17 (Item 8 from file: 233)  
DIALOG(R)File 233:Internet & Personal Comp. Abs.  
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00513569 98NC11-108

**Firewalls -- Cisco PIX Firewall 520**  
Morrissey, Peter  
Network Computing , November 15, 1998 , v9 n21 p88, 1 Page(s)  
ISSN: 1046-4468  
Company Name: Cisco Systems  
URL: <http://www.cisco.com>  
Product Name: Cisco PIX Firewall 520  
Languages: English  
Document Type: Software Review  
Grade (of Product Reviewed): B  
Geographic Location: United States

Presents a favorable review of the Cisco PIX Firewall 520 (\$9,000) from Cisco Systems of CA (800, 408). States that its performance was the best of all the units tested, adding that even the enabling of **NAT (network address translation)** did not negatively impact it. Expresses concern for its inability to regulate **FTP** puts and gets even though it can block potentially harmful **SMTP** commands. Reports that testers found setting up more than very simple security policies involving access based on services, hosts, and networks a very awkward process. Cautions that the updating of current security policies to new rules requires the removal of all original rules prior to the entry of the new and unchanged ones. Expresses disappointment at its management application which requires that an NT Server be dedicated to run the software before users on the Web can access it. Labels its logging and monitoring weak. (CAT)

Descriptors: Firewalls; Privacy; Security  
Identifiers: Cisco PIX Firewall 520; Cisco Systems

9/5/18 (Item 9 from file: 233)  
DIALOG(R)File 233:Internet & Personal Comp. Abs.  
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00508122 98IW09-302

**CyberGuard offers hybrid defense, lacks refinement**  
McClure, Stuart  
InfoWorld , September 28, 1998 , v20 n39 p40C, 40I, 2 Page(s)  
ISSN: 0199-6649  
Company Name: CyberGuard

URL: <http://www.cyberguard.com>  
Product Name: CyberGuard for NT 4.1  
Languages: English  
Document Type: Software Review  
Grade (of Product Reviewed): C  
Geographic Location: United States  
Presents a mixed review of CyberGuard for NT 4.1 (\$1,495 for 25 users, \$9,995 for unlimited users) from CyberGuard Corp. of Ft. Lauderdale, FL (800, 954). Notes that CyberGuard is simple to set up and utilize as soon as it has been installed but cautions that users do not have complete access to the firewall. Praises its inclusion of NT hardening products for disabling blank passwords, restricting file-system access to the users group, and eliminating all hidden shares except interprocess communications. Points out CyberGuard's compliance with **NAT** (network address translation) and ICMP (Internet Control Message Protocol) protocols, along with its granular **FTP** control of some functions. Cautions about its lack of logging facility and warns that its load balancing is suitable at best. Concludes that even if flawed, CyberGuard is potentially a solid firewall for NT users. Includes one scorecard. (CAT)  
Descriptors: Firewalls; Encryption; Internet; Networks; Groupware  
Identifiers: CyberGuard for NT 4.1; CyberGuard

9/5/25 (Item 2 from file: 256)  
DIALOG(R)File 256:TecInfoSource  
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00125680 DOCUMENT TYPE: Review

PRODUCT NAMES: Raptor Firewall 6.5 with Power VPN (721719)

TITLE: Still Fired Up: Three years later, Axent's Raptor Firewall still...  
AUTHOR: Schultz, Keith  
SOURCE: InternetWeek, v827 p34(1) Sep 4, 2000  
ISSN: 0746-8121  
HOMEPAGE: <http://www.internetwk.com>

RECORD TYPE: Review  
REVIEW TYPE: Review  
GRADE: A

AXENT Technologies' Raptor Firewall 6.5 with Power VPN, the latest upgrade to the product, is still one of the best application filtering firewalls on the market. One advantage of Raptor for Windows NT is the ability to include the Power VPN service. Power VPN (virtual private network) is also available separately and uses Proxy/Secured technology to scan all incoming and outgoing traffic. Users can therefore apply rules and proxies to VPN traffic, just as they do to regular traffic. Thus, secure, dependable communications are possible among customers and partners without installing a wide- open tunnel. Raptor Firewall 6.5 with PowerVPN supports Lightweight Directory Access Protocol (LDAP), bi-directional **Network Address Translation** (NAT), and a savvy management console. AXENT also plans versions for Windows 2000, Tru64 UNIX, Solaris, and HP-UX. Raptor ships with predefined proxies for widely used services, including Hypertext Transfer Protocol (HTTP), **ftp**, Simple Mail Transfer Protocol (SMTP), Network News Transfer Protocol (NNTP), and NTP. Raptor also provides a proxy service called Generic Service Passes, which is a proxy filter that helps provide secure, managed access for new or legacy IP services on nonstandard support. Raptor Management Console is a customized release of Microsoft Management Console, and Raptor Firewall 6.5 also works with RADIUS, TACACS, and NT user domains, as well as an LDAP directory. Bidirectional **NAT**, which is one of the best features in Raptor Firewall 6.5, allows users to create a list of **addresses** to make incoming and outgoing traffic seem to originate from a predetermined **address**.

PRICE: \$8995

COMPANY NAME: Symantec Corp (386251)

SPECIAL FEATURE: Charts Screen Layouts  
DESCRIPTORS: Computer Security; Firewalls; IBM PC & Compatibles; Internet Security; Internetworking; Intranets; Network Administration; Network Software; System Monitoring; Windows NT/2000  
REVISION DATE: 20020630

9/5/26 (Item 3 from file: 256)  
DIALOG(R)File 256:TecInfoSource  
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00122936 DOCUMENT TYPE: Review

PRODUCT NAMES: PowerVPN 6.5 Windows (693294)

TITLE: PowerVPN keeps networks safe: Flexible, low-hassle product  
provid...

AUTHOR: Andress, Mandy

SOURCE: InfoWorld, v22 n12 p41(1) Mar 20, 2000

ISSN: 0199-6649

HOMEPAGE: <http://www.infoworld.com>

RECORD TYPE: Review

REVIEW TYPE: Review

GRADE: A

AXENT Technologies' Axent PowerVPN 6.5 is the latest version of AXENT's solution to implementing virtual private networks. PowerVPN 6.5 received excellent marks for ease of use, flexibility, and compliance with Computer Security Association (ICSA) and Internet Protocol Security (IPSec) interoperability standards. PowerVPN sits at the application level and works as a proxy server. Its three primary components are PowerVPN server, RaptorMobile VPN, and Raptor Firewall. PowerVPN 6.5 has proxies for HTTP, HTTPS, FTP, Telnet, NNTP (Network News Transfer Protocol), ICMP (Internet Control Message Protocol), and NTP (Network Time Protocol), and it also supports SQLNet, NetBIOS, RealAudio, and AOL Instant Messenger. Entrust certificates, RADIUS (Remote Authentication Dial-In User Service), LDAP, userID/password, and other authentication options are included, but PowerVPN currently only supports Entrust certificates. Full Network Address Translation (NAT) support allows administrators to hide IP data from view, which is important for encrypted packets that need IP address payload modification. PowerVPN 6.5's important RaptorMobile client is much easier to install than in previous versions and can be configured to block traffic to specific ports. In testing, installation of PowerVPN 6.5 took roughly 15 minutes, and configuration took about an hour. PowerVPN lacks X.509v3 support and is only available for Windows clients.

PRICE: \$1995

COMPANY NAME: Symantec Corp (386251)

SPECIAL FEATURE: Charts

DESCRIPTORS: Computer Security; IBM PC & Compatibles; Internet Security; Internetworking; Intranets; Network Administration; Network Software; System Monitoring; VPNs; Windows

REVISION DATE: 20020630

9/5/27 (Item 4 from file: 256)  
DIALOG(R)File 256:TecInfoSource  
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00119131 DOCUMENT TYPE: Review

PRODUCT NAMES: OneGate 1000 Beta (771449)

TITLE: OneGate 1000: A Cost-Effective Internet Solution With an Edge

AUTHOR: Cernick, Paul

SOURCE: Network Computing, v10 n12 p38(2) Jun 14, 1999

ISSN: 1046-4468

Homepage: <http://www.NetworkComputing.com>

RECORD TYPE: Review

REVIEW TYPE: Review

GRADE: A

FreeGate's OneGate 1000 beta Internet appliance is an all-in-one multiservice Internet gateway that includes an IP router, support for DNS, DHCP, and Network Address Translation (NAT); and a Web server, a firewall, e-mail, an FTP server, and virtual private network (VPN) support. OneGate 1000 also has an intuitive user interface that simplifies configuration and cuts down on administrative overhead. The configuration interface is helpful, but it does not eliminate additional configuration for complex network functions. However, OneGate 1000 is a step in the right direction to make Internet technology accessible and affordable, one example being that it can be configured as a remote-access VPN as a software license add-on. In addition to remote-access VPN, a branch-to-branch VPN can be configured with two OneGate 1000s, which creates a secure tunnel between sites using IP Security, Triple DES, and MD 5 technology, and is configurable depending on geographic location. Both VPN-based solutions will only support IP. The good documentation expedited troubleshooting OneGate 1000, and the online diagnostic tools were detailed enough to fix a host of problems. Upgrading hard drives is easy, as is adding memory, and buying a completely new box as a company's technology grows in unnecessary.

File 348:EUROPEAN PATENTS 1978-2004/Dec W02

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File 349:PCT FULLTEXT 1979-2002/UB=20041209,UT=20041202

(c) 2004 WIPO/Univentio

Set	Items	Description
S1	47382	NAT OR NETWORK() ADDRESS() TRANSLAT?????
S2	7689	FTP OR FILE() TRANSFER() PROTOCOL
S3	2923	(EXTERNAL OR ROUTABLE OR PUBLIC) (2W) (ADDRESS OR ADDRESSES)
S4	2750	(INTERNAL OR NONROUTABLE OR (NON OR "NOT") () ROUTABLE OR PRIVATE) (2W) (ADDRESS OR ADDRESSES)
S5	10	S1(50N)S2(50N)S3(50N)S4
S6	62	SECUR???(2W)S2
S7	0	S1(20N)S6
S8	1	S1(50N)S6

01733920

Method and device for supporting a 6to4 tunneling protocol across a network address translation mechanism

Verfahren und Vorrichtung zur Unterstutzung eines 6to4 Tunnelprotokols mittels Mechanismus fur Netzwerkadressumsetzung

Procede et dispositif supportant un protocol tunnel 6to4 a l'aide d'un mecanisme de conversion des adresses de reseau

PATENT ASSIGNEE:

Thomson Licensing S.A., (2880641), 46, quai A. Le Gallo, 92100 Boulogne-Billancourt, (FR), (Applicant designated States: all)

INVENTOR:

Lepoil, Elisabeth, 55 rue du Parc, 35135 Chantepie, (FR)  
Van Aken, Dirk, J.S. Bachlaan 12B2, 1083 Ganshoren, (BE)

LEGAL REPRESENTATIVE:

Kohrs, Martin et al (88663), Thomson multimedia 46, quai A. Le Gallo, 92648 Boulogne Cedex, (FR)

PATENT (CC, No, Kind, Date): EP 1420559 A1 040519 (Basic)

APPLICATION (CC, No, Date): EP 2002292825 021113;

DESIGNATED STATES: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; SK; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: H04L-029/06; H04L-012/46

ABSTRACT WORD COUNT: 101

NOTE:

Figure number on first page: 4

LANGUAGE (Publication, Procedural, Application): English; English; English  
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200421	498
SPEC A	(English)	200421	2603
Total word count - document A			3101
Total word count - document B			0
Total word count - documents A + B			3101

...SPECIFICATION outer header of the packets (the IPv4 address in the inner header remains unchanged), the **NAT** according to the present embodiment also reflects the translation at the level of the inner header.

As illustrated by figure 1, according to the present embodiment, the **NAT** is assisted by an "Application Level Gateway" for the specific processing required for the 6to4...

...realm. In the present example, the ALG is integrated into the router, along with the **NAT**.

The 6to4 ALG operates on packets sent by applications running over the 6to4 protocol. It...

...detected packets, carries out the following processing:

(a) In the inner IPv6 header, replace the **private IPv4 address** ('V4ADDR') of the 6to4 prefix with the **public IPv4 address** for outgoing packets and vice versa for incoming packets.

(b) Update fields depending on the...

...any upper layer fields embedding the 6to4 prefix, such as it is the case in **FTP** (e.g. the whole prefix has to be replaced in the payload of an **FTP** packet (EPTR field)).

The coherence between the inner and the outer header is then restored

...

...incorrect packet delivery, in particular a response packet to a 6to4 packet going through a **NAT** functionality. The responding host, e.g. when Host 3 of figure 1 responds to Host 1, Router 2 will use the **public IPv4 address** in the modified 6to4 prefix to generate an IPv4 destination address for Host3 response packet...

...associating inbound and outbound traffic packets. The 6to4 ALG carries out the following processing. The **NAT** ALG maintains a list for mapping 6to4 destination addresses of inbound packets to the correct **private** 6to4 host **address** for packets returned by a remote host. It picks up a 'multiplexing identifier' from the...

5/3,K/2 (Item 2 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01657572

**Method for reducing the number of global IP addresses required for servers located in private networks**

**Methode zur Reduzierung der globalen IP Adressen, die fur Server benotigt werden, die in privaten Netzen stehen**

**Procede pour reduire des adresses globales IP requises par des serveurs situes dans des reseaux prives**

PATENT ASSIGNEE:

Huawei Technologies Co., Ltd., (3130914), Huawei Service Centre Building, Kefa Road, Science-Based Industrial Park, Shenzhen City, Guangdong 518057, (CN), (Applicant designated States: all)

INVENTOR:

Wang, Ning, HUAWEI TECHNOLOGIES CO., LTD. Huawei Service Centr, 518057, Shenzhen City, Guangdong Provinc, (CN)

LEGAL REPRESENTATIVE:

Virkkala, Jukka Antero (85121), Kolster Oy Ab, Iso Roobertinkatu 23, P.O. Box 148, 00121 Helsinki, (FI)

PATENT (CC, No, Kind, Date): EP 1363441 A1 031119 (Basic)

APPLICATION (CC, No, Date): EP 2003101332 030514;

PRIORITY (CC, No, Date): CN 21167974 020515

DESIGNATED STATES: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IT; LI; LU; MC; NL; PT; RO; SE; SI; SK; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK

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Total word count - document B			0
Total word count - documents A + B			2413

...ABSTRACT typical environment the hosts and servers of an internal network access the Internet via a **NAT** Router. The configuration of the **external address**, external port, and external protocol code of an internal server as well as the **internal address**, internal port, and internal protocol code of the internal server on the **NAT** Router, and the establishment of a mapping table relating to the internal server according to the configured parameters, enables external hosts to access the internal server through the valid **public IP address** of the internal network and the port providing exterior services of the internal server.

According to the present invention, WEB server and **FTP** server in the LAN can be easily provided without occupying too much valid IP addresses, thus, the present invention saves limited **public IP addresses** resource. Furthermore, the present invention implements port-level support to the internal server, and guarantees...

5/3,K/3 (Item 1 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT

01121576 \*\*Image available\*\*

METHOD AND DEVICE FOR SUPPORTING A 6TO4 TUNNELING PROTOCOL ACROSS A NETWORK  
ADDRESS TRANSLATION MECHANISM  
PROCEDE ET DISPOSITIF POUR LA MISE EN OEUVRE DE PROTOCOLE TUNNEL 6A4 SUR UN  
MECANISME DE TRADUCTION D'ADRESSE DE RESEAU

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200445183 A1 20040527 (WO 0445183)

Application: WO 2003EP12832 20031113 (PCT/WO EP03012832)

Priority Application: EP 2002292825 20021113

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK  
LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC  
SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) BW GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 3272

Fulltext Availability:

Detailed Description

Detailed Description

... outer

header of the packets (the IPv4 address in the inner header remains  
unchanged), the **NAT** according to the present embodiment also reflects  
the translation at the level of the inner header.

As illustrated by figure 1 , accordin' ent embodiment, the  
g to, the pres

**NAT** is assisted by an "Application Level GEiteway` for the specific  
processing  
required for the 6to4...

...realm. In the present example, the ALG is integrated into the router,  
along with the **NAT** .

The 6to4 AILG operates on packets sent by applications running over  
the 6to4 protocol. It...

...detected packets, carries out the following processing.

(a) In the inner IM header, replace the **private IPv4 address**  
('V4ADDR') of the 6to4 prefix with the **public IPv4 address** for  
outgoing packets and vice versa for incoming packets.

(b) Update fields depending on the...

...any upper layer fields embedding the 6to4 prefix, such as it is the case  
in **FTP** (e.g. the whole prefix has to be replaced in the payload of an

FTP packet (EPTR field)).

The coherence between the inner and the outer header is then restored...

...incorrect packet delivery, in particular a response packet to a 6to4 packet going through a **NAT** functionality. The responding host, e.g. when Host 3 of figure 1 responds to Host 1, Router 2 will use the **public IPv4 address** in the modified 6to4 prefix to generate an IPv4 destination address for Host3 response packet...

...associating inbound and outbound traffic packets. The 6to4 AILG carries out the following processing. The **NAT** ALG maintains a list for mapping 6to4 destination addresses of inbound packets to the correct **private 6to4 host address** for packets returned by a remote host. It picks up a 'Imultiplexing identifier' from the...

5/3,K/4 (Item 2 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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01019405 \*\*Image available\*\*  
INTEGRATED INTERNET PROTOCOL (IP) GATEWAY SERVICES IN AN RF CABLE NETWORK  
SERVICES INTEGRES DE PASSERELLE A PROTOCOLE INTERNET (IP) DANS UN RESEAU  
CABLE RF

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200349445 A2-A3 20030612 (WO 0349445)  
Application: WO 2002US37955 20021121 (PCT/WO US0237955)  
Priority Application: US 2001998107 20011130

Designated States:

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BR CA JP

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR

Publication Language: English

Filing Language: English

Fulltext Word Count: 73339

Fulltext Availability:

Detailed Description

Detailed Description

... and 1 14 for the three IP devices 124, 13 4, and 144 even though **NAT** device 1 0 1 only has two IP addresses (1 3 5 25. ...an IP device in the other IP address realm. In the example above of traditional **NAT** or outbound **NAT**, IP devices 124, 134, and/or 144 in IP address realm 1 1 4 established...

...web server running on IP device 122 in IP address realm 112. This communication using **NAT** was outbound from IP address realm 114 that comprised **private IP addresses** 1 OXXX In the traditional **NAT** example described above, the binding or mapping of IP addresses and/or ports in **NAT** device 1 0 1 was statically assigned or dynamically created when a device in IP address realm 1 1 4 initiated a session. Bi-directional or two-way **NAT** would allow IP device 122 with an IP

address in IP address realm 1 12 non-limiting example of bi-directional **NAT** , assume that IP device 122 has the internet-valid, **public IP address** of 192.190. Further assume that IP devices 124, 134, and 144 have the **private IP addresses** of 10.0.124, 10.0.134, and 10.0.144, respectively. Also, assume that **NAT** device 101 manages the two internet-valid IP addresses of 135.25.1...0.144 TCP port 21. TCP port 21 is the well-known TCP port for **FTP** servers, while TCP port 80 is the well-known port for **HTTP** servers or web...

...addresses is similar to the configuration described above in the example for traditional or outbound **NAT** . Thus, the outbound access described above for traditional or outbound **NAT** will still operate the...

5/3,K/5 (Item 3 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
(c) 2004 WIPO/Univentio. All rts. reserv.

01000439 \*\*Image available\*\*  
**METHOD AND SYSTEM FOR ENSURING SECURE FORWARDING OF MESSAGES**  
**PROCEDE ET SYSTEME POUR ASSURER LE REACHEMINEMENT DE MESSAGES EN TOUTE SECURITE**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200330488 A1 20030410 (WO 0330488)

Application: WO 2002FI771 20020927 (PCT/WO FI0200771)

Priority Application: FI 20011911 20010928

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 7097

Fulltext Availability:

Detailed Description

Detailed Description

... method for working through Network Address Translation (NAT) devices.

Said problem with Network Address Translation ( **NAT** ) devices, even if **NAT** devices are able to translate addresses of private networks in messages to **public IP addresses** so that the messages can be sent through internet, is, however, that currently no standard for making Mobile IP work through **NAT** devices. **NAT** devices are widely deployed because the use of **private addresses** requires less **public IP addresses** than

REFERENCES

The following is a list of useful references for understanding the

technology behind...

...in general, UDP and TCP.

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[RFC791 ]

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...edufin-notes/rfc791.bd

[RFC792]

J. Postel, Internet Control Message Protocol, RFC 792, September 1981.

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[RFC7931

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[RFC2003]

C. Perkins, IP Encapsulation Within IP, RFC 2003, October...

**5/3,K/6 (Item 4 from file: 349)**

DIALOG(R)File 349:PCT FULLTEXT

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00951439

COMMUNICATIONS PROTOCOLS OPERABLE THROUGH NETWORK ADDRESS TRANSLATION (NAT)

TYPE DEVICES

PROTOCOLES DE COMMUNICATION FONCTIONNANT AVEC DES APPAREILS DE TYPE  
TRADUCTION D'ADRESSE DE RESEAU (NAT)

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200284974 A2-A3 20021024 (WO 0284974)

Application: WO 2002US11756 20020412 (PCT/WO US0211756)

Priority Application: US 2001837449 20010417

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prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR

LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI

SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM  
Publication Language: English  
Filing Language: English  
Fulltext Word Count: 7090

Fulltext Availability:

Detailed Description

Detailed Description

... been made to share a single network address among multiple computers. One wellknown example is **Network Address Translation (NAT)**, which hides an ...external network 104 by routing network traffic through the access point. Internal networks generally use **private network addresses** that are not routable on the public 1 network without translation. During operation, access points...

...source IP address and ports of outgoing network traffic to map the traffic to an **external or public address** of the access point and a unique port. Conversely, the access point translates incoming network traffic destination IP address and unique port back to an original **internal address** and port. However, access points ...ports.

Network traffic translation performed by a translating access point such as 1 0 a **NAT** gateway/router 102, firewall 108, or the like, is transparent to many applications. However, such...IP Security (IPSec), end-to-end security models not allowing packet header alterations, and the **File Transfer Protocol (FTP)**, are all examples of protocols that break if used behind translating access points such...

5/3, K/7 (Item 5 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT  
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00942518 \*\*Image available\*\*

**GENERIC EXTERNAL PROXY**

**PROCURATION EXTERNE GENERIQUE**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200276065 A2-A3 20020926 (WO 0276065)

Application: WO 2002US6077 20020301 (PCT/WO US0206077)

Priority Application: US 2001811011 20010315

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 5988

Fulltext Availability:

Detailed Description

Detailed Description

... been made to share a single network address among multiple computers. One wellknown example is **Network Address Translation (NAT)**, which hides an internal network behind an access point in communication with...

...external network by routing network traffic through the access point. Since the internal network uses **private** network **addresses** the packets from this network are not routable in the Internet without translation. During operation...

...address and ports of outgoing network traffic to map the traffic to an external or **public**

1

**address** and a unique NAT port. NAT also modifies destination IP address and port of incoming network traffic using the mapping of **external address** and unique **NAT** port back to the original **internal address** and port. NAT ignores network traffic not received in response to original outgoing network traffic, and incoming traffic to unmapped ports,

Network traffic translation performed by a translating access point such as a **NAT** gateway/router 102, firewall 108, or the like, is transparent to many applications. However, translations...

...address and/or communication port values as application data within network traffic, such as the **File Transfer Protocol (FTP)**, multi-player network game protocols, etc.

For example, in FIG. 1 , an H.323 client...

5/3,K/8 (Item 6 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00887537 \*\*Image available\*\*

**SYSTEM AND METHOD FOR SECURE DUAL CHANNEL COMMUNICATION THROUGH A FIREWALL**  
**SYSTEME ET PROCEDE DE COMMUNICATION SECURISEE SUR DEUX VOIES A TRAVERS UN**  
**PARE-FEU**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200221772 A2-A3 20020314 (WO 0221772)

Application: WO 2001US27595 20010905 (PCT/WO US0127595)

Priority Application: US 2000655256 20000905

Parent Application/Grant:

Related by Continuation to: US 2000655256 20000905 (CON)

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT (utility model) AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR  
CU CZ (utility model) CZ DE (utility model) DE DK (utility model) DK DM  
DZ EC EE (utility model) EE ES FI (utility model) FI GB GD GE GH GM HR HU  
ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX  
MZ NO NZ PH PL PT RO RU SD SE SG SI SK (utility model) SK SL TJ TM TR TT  
TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 5747

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... decipher and translate the address information contained within the data payload. As a result, secure **FTP** cannot be used in crossing firewall boundaries.

SUMMARY OF THE INVENTION

The present invention provides...

...problems and  
disadvantages associated with previous methods and systems.

In particular, client-side network address **translation** ( **NAT** ) is performed at the server on encrypted payload addresses, using header address information.

In accordance...

...communication packet

including a header and a data payload. The header may include a client **external IP address**, and the data payload may include an encoded port command having a client **internal IP address** and a client data port number. The server may also include a codec operable to decode the port command. A translation module may be provided for retrieving the client **external IP address** from the header and replacing the client **internal IP address** with the client **external IP address**. In accordance with one embodiment of the present invention, the server is operable to establish data channel coordinates including the client **external IP address**, the client data port number, a server **internal IP address** and a server data port number.

In accordance with another aspect of the present invention...

Claim

... client over a first channel,  
the dual communication packet including a header having a client **external IP address** and a data payload having an encoded port command having a client **internal...**

...client and  
the server.

4 The server of Claim 1, further comprising a file transfer **protocol** ( **FTP** ) communication module wherein the communication session between the server and the client over the second channel is conducted in secure **FTP**.

5 The server of Claim 1, wherein the codec is

operable to decode based on...

...server over a first channel,  
the dual communication packet including a header having a  
server **external IP address** and a data payload having an  
encoded port command having a server **internal IP address** and  
a server data port number;  
a codec operable to decode the port command;  
a translation module operable to retrieve the server  
**external IP address** from the header and to generate a  
modified port command including the **external IP addresses** ;  
and  
the server operable to establish a second channel based  
on the modified port command...

...each of the  
client and the server.

The client of Claim 6, further comprising a **file**  
**transfer protocol** (FTP) communication module wherein the  
communication session between the server and the client over  
the second channel is conducted in secure **FTP**.

10 The client of Claim 6, wherein the codec is  
operable to decode based on...

5/3,K/9 (Item 7 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00842444 \*\*Image available\*\*

PROXY NETWORK ADDRESS TRANSLATION

TRADUCTION D'ADRESSE RESEAU DE SERVEUR MANDATAIRE

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200176191 A1 20011011 (WO 0176191)

Application: WO 2001US2990 20010130 (PCT/WO US0102990)

Priority Application: US 2000541461 20000331

Designated States:

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prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB  
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA  
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA  
UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 6640

Fulltext Availability:

Detailed Description

Detailed Description

... first socket 518, during which routing they are translated at a packet  
level by the **NAT** component 5 1 0 of the PNAT device 5 02, so that the  
identifier of the client 504, such as the **private IP address** of the

client 504, is re-inserted into the packets, taking the place, for example, of the **public IP address** that the **private IP address** was I 1 previously translated to, and the source is set to be the server...  
...stream is used to exchange addresses of another stream. Example protocols in this regard include **File Transfer Protocol (FTP)**, as well as most media streaming protocols. These protocols require specific editing for traversing **NAT**, as can be appreciated by those of ordinary skill within the art.

It is also noted that each of the proxy component 508 and the **NAT** component 510 can in varying embodiments be software, hardware, or a combination of...

5/3,K/10 (Item 8 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00798287 \*\*Image available\*\*

**METHOD AND SYSTEM FOR DUAL-NETWORK ADDRESS UTILIZATION BY VIRTUAL TUNNELING  
PROCEDE ET SYSTEME POUR L'UTILISATION D'ADRESSES EN DOUBLE RESEAU PAR  
TUNNELLISATION VIRTUELLE**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200131888 A1 20010503 (WO 0131888)

Application: WO 2000US41211 20001018 (PCT/WO US0041211)

Priority Application: US 99426614 19991026

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Related by Continuation to: US 99426614 19991026 (CON)

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE  
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Detailed Description

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... subnet is smaller of part of a larger network using a similar network addressing scheme.

Network Address Translation ("NAT") has been proposed to extend the lifetime of Internet Protocol version 4...

...few dozen nodes or devices because of the computational and other resources required. Network address translation potentially requires support for many different application layer internal network protocols be specifically programmed into a translation mechanism such as a

network address translation router.

Computational burdens placed on a network address translation router may be

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significant and degrade network performance, especially if several network address translation -enabled sub-networks share the same network address translation router.

In a worst case scenario, a network address translation router translates every inbound and data packet.